VOL. 160 — NO. 7

FEBRUARY 18, 1961

Telephony

THE JOURNAL OF THE TELEPHONE INDUSTRY

Computer room which is the heart of the new 2-million-dollar electronic data processing system to handle subscriber billing collection information installed by Bell Telephone Co. of Pennsylvania — the first of similar systems to be established by the Bell System. See story, page 26.

Circulation This Issue
14,094 of Which
13,511 Is Paid

MANAGEMENT · PLANT · TRAFFIC · COMMERCIAL · LEGAL · ACCOUNTING

Save on construction costs with the new '61 FORD TRUCKS

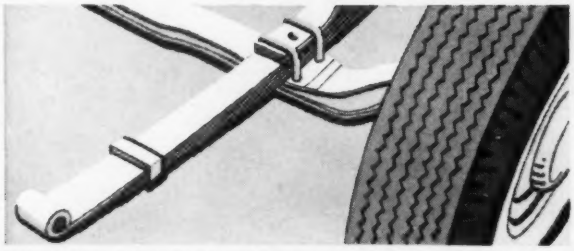
SAVE FROM $31 TO $157 ON PRICE* ALONE WITH FORD'S F-100 STYLESIDE PICKUPS

Contractors everywhere are finding that the half-ton Ford Styleside is priced below all other comparable pickups! And these rugged pickups are designed to keep right on saving with lower maintenance and operating expenses. Their durable, one-piece cab-and-box construction provides increased rigidity and eliminates a major source of rust and corrosion. Not only does the sheet metal last longer with this stronger body, but it also contributes to a quieter ride.

And you can save more . . . because you can carry more on every trip. Styleside bodies are longer and wider with loadspace increased as much as 16%. In addition, wheelbases have been lengthened 4 inches and this combined with the improved shock absorbers gives a ride that's unexcelled in its field—proven by scientific Impact-O-Graph tests. For construction work the angle of approach has been increased so you can climb steeper drives or go over deeper ditches or gullies. Ford also offers America's lowest-priced* 4 x 4 with big 8-ft. box, the F-100 Flareside.

And you can save on operating expense! Ford's Mileage Maker 223 Six is standard on all conventional pickups to keep gas costs low. The economical 292 V-8 is available for jobs requiring extra power. Both engines are equipped with Ford's Full-Flow oil filter that lets you get 4,000 miles between oil changes.

**Based on a comparison of latest available manufacturers' suggested retail delivered prices*



SAVE UP TO $150 ON FRONT TIRES! In certified tests of truck suspensions, Ford front tires lasted up to twice as long. In 50,000 miles, savings can add up to $150 on a pickup . . . more on two-tonners. And Ford's sturdy I-Beam front axle and leaf-spring suspension not only cut tire wear, but their simpler design also cuts maintenance costs.

12,000 MILE OR 12 MONTH WARRANTY

SAVE WITH GREATER DURABILITY . . . on all 1961 Ford Trucks, each part, except tires and tubes, is now warranted by your dealer against defects in material and workmanship for 12 months or 12,000 miles, whichever occurs first. The warranty does not apply, of course, to normal maintenance service and to the replacement in normal maintenance of parts such as filters, spark plugs and ignition points. Never before have you had such protection . . . such evidence of long-term economy!

SAVE WITH FORD'S NEW 262-CU. IN. "BIG SIX" ALL-TRUCK ENGINE FOR TOP PERFORMANCE AND ECONOMY

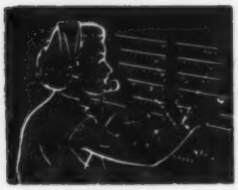
America's savingest two-tonners offer a big 262 Six with the power of big displacement, the gas economy of 6-cylinder design, plus the durability of heavy-duty construction. This engine features a sturdy stress-relieved block, strong forged steel crankshaft, long-lasting stellite-faced intake and exhaust valves, and durable pyramid-type connecting rods. And Positive Crankcase Ventilation reduces oil dilution and sludge formation to extend engine life. Ford's proven 292 V-8 and 292 HD V-8—the V-8's with "six-like" economy—are also available for your special power needs.

You also save with other new durability features like the more rugged frame, stronger radiator with new lock-seam construction, improved cab and chassis electrical wiring, plus longer, easier-riding and more durable rear springs. Ford's parallel ladder-type frame with standard 34-inch width allows you to install new or transfer your present special construction bodies quicker and for less. Also, the frame drop in the cab area lowers cab height . . . makes for easier entry.

FORD TRUCKS COST LESS

YOUR FORD DEALER'S "CERTIFIED ECONOMY BOOK" PROVES IT FOR SURE...

FORD DIVISION, Ford Motor Company



FLASHES AND PLUGS

ALL ALONE BY THE TELEPHONE? The wisdom of not rushing headlong into a telephone conversation, without finding out exactly who you are connected to, may have been forcefully demonstrated to one California husband recently. If not, he probably has given up working nights, according to a story reported in the employe magazine of the Title Insurance & Trust Co., Los Angeles, Cal.

It seems that one evening, soon after Walter Laird, title officer for TI&T at the Kern County office, and his wife, Marilyn, had retired, the telephone rang.

Marilyn, being nearest to the bedside telephone, answered.

The caller's voice was audible through the room, as he explained, "Honey, I won't be home for a while yet. I'm still with those two customers."

Before Mrs. Laird could tell the caller he had the wrong number, Walter grabbed the telephone and answered: "That's all right, Buddy. Take your time," and then dropped the receiver back in place.

•

IT AIN'T WHAT YOU THINK. Besides that well-known communication medium, the telephone, come to think of it, there is another communication medium which pre-dates even the earliest telephone, the kiss.

We are reminded by the *Wall Street Journal*, that since nowhere has the matter of communication been more important than in the military, the U. S. Navy now has a Project KISS, which is intended solely for the purpose of improving communications. This project has been organized by the Bureau of Naval Weapons, too, which is making its own private war on gobbledygook in official orders, papers, memos, etc.

The order has gone out: KISS—Keep It Simple, Stupid!

•

JIMINY WHISKERS, UNCLE SAM! Recently, an official of the federal immigration and naturalization service interviewed an Italian woman who was applying for American citizenship. Probably thinking this would be an easy question for her to answer, he asked, "Who discovered America?"

To his amazement, she could not answer this question, and he told her he could not imagine how she had missed the answer.

He had not however, reckoned with the extent of the woman's desire to be a citizen. His telephone rang at 11:30 p.m., and an excited voice shouted in his ear, "Christopher Columbus!"

•

CAME HOME, BUT NOT ALONE. From Mt. Vernon, Ill., comes the report that Bill Bailey's wife pled with her husband over the telephone to please come home, and come he did.

Bill brought with him his fellow firemen, and they quickly put out a blaze in the furnace motor.

CHANGE OF ADDRESS

Please notify your local postmaster and the Circulation Department of TELEPHONY of change of address. Change cannot be made without the old as well as the new address. Allow three weeks for change of address to become effective.

Telephony

THE JOURNAL OF THE TELEPHONE INDUSTRY

1901 — 60 years — 1961

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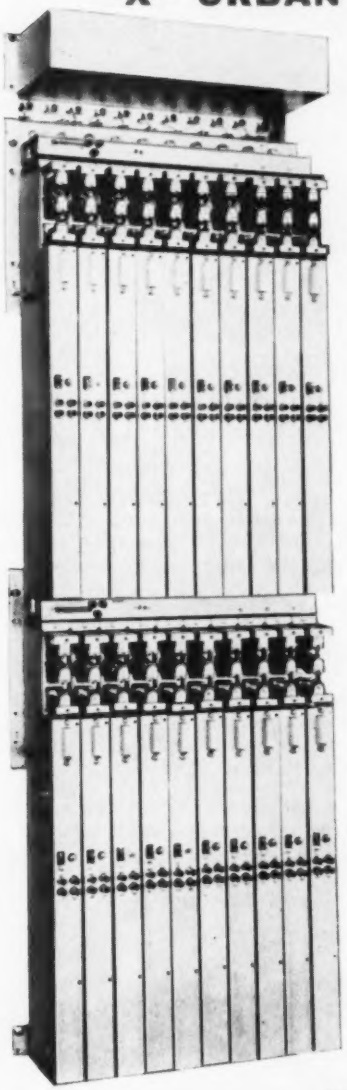

- HELD ORDERS RELIEF FOR RAPIDLY GROWING URBAN AREAS HAVING LIMITED CABLE PAIRS AVAILABLE.
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This system may be operated on 48 volt central office battery with cable repeaters series fed. System alignment is made simple by the use of alignment equipment especially designed for these systems.

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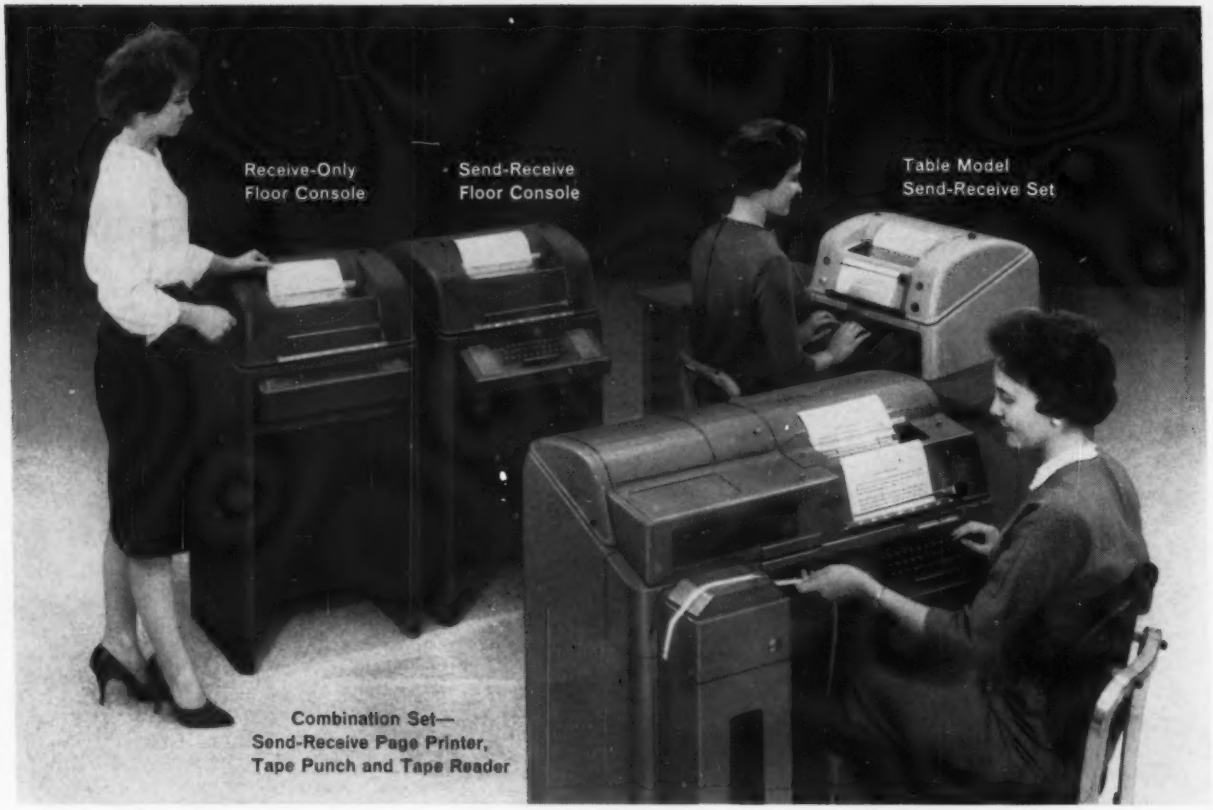

Which Teletype printer is best for you?

Which of these Teletype Model 28 page printers is best for your message and data communications needs? Each will perform the basic function of all Teletype equipment—to flash information over long or short distances. But in addition, each has varying capabilities to meet the requirements of the individual user:

Send-receive page printer in console—probably Teletype's most familiar product; for sending as well as receiving page copy.

Receive-only page printer in console—the same machine, but without a keyboard. For use where information need only be received, not sent. No operator is required.

Table model—with or without keyboard . . . similar model available for rack mounting.

Combination set—a complete message center in one compact cabinet. In addition to page printer and keyboard, it contains facilities for preparing punched tape and for transmitting and receiving via tape.

All of these Teletype Model 28 page printers feature the Stunt Box, a built-in "programming" mechanism that will inexpensively handle a wide variety of remote control and switching tasks such as automatic station selection. All models can be supplied with sprocket-feed and tabulating mechanisms for use with multi-copy business forms. All are available, too, in a choice of cabinet colors to match office decor.

Teletype Corporation manufactures this equipment for the Bell System and others who require the utmost reliability from their data communications. Teletype equipment can be used with Data-Phone and other communications services.

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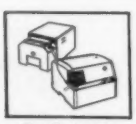
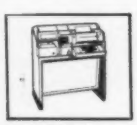

Tape Reader and Typing Tape Punch

Send-Receive Page Printer


Automatic Send-Receive Set

Free Model 28 Line folder. Write Dept. 65-B, 5555 Touhy Avenue, Skokie, Illinois.

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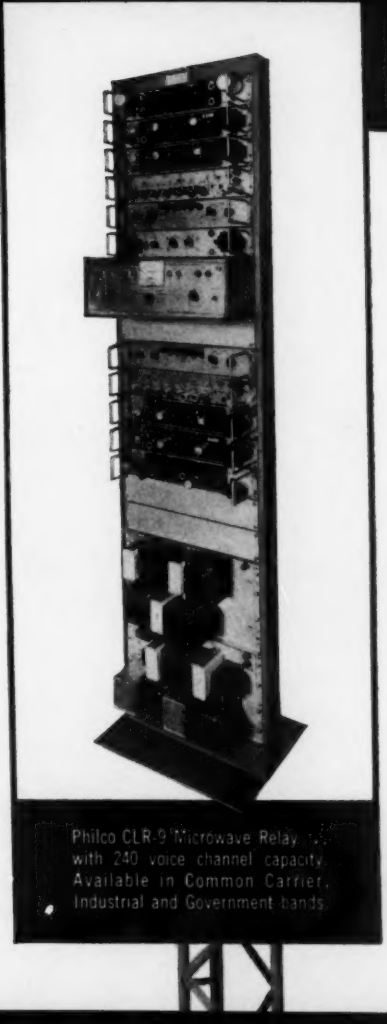

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KEYSTONE WIRE FOR THE TELEPHONE INDUSTRY

. . . by the makers of famous Red Brand Fence

SAVE WITH THE
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"Hold it! ...
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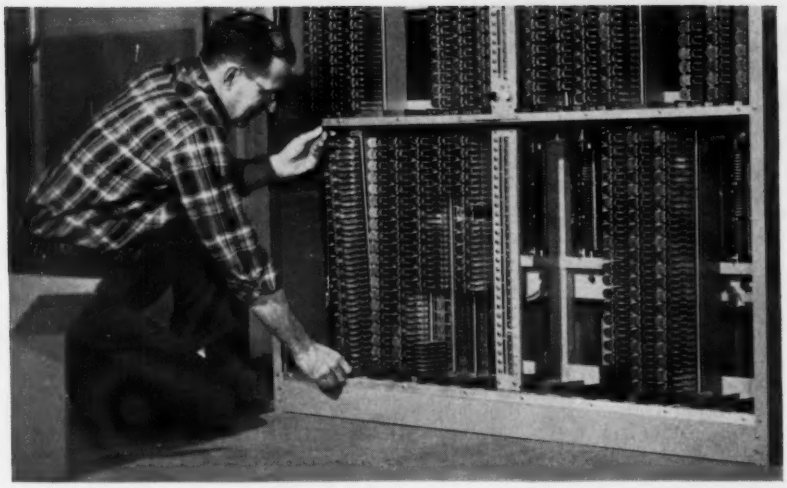

Let's consider the cost of additions, too"

Before you decide on a dial system, consider the cost of additions as well as initial cost. The Leich Dial System greatly reduces your expansion costs.

For example, it costs only $194.00 for a relay bar that adds 10 lines to your Leich Dial System! By simply jacking-in a 10-line relay bar you expand economically and quickly. It takes only about 15 seconds.

Line finder switches, connector switches, selector switches, and link relay bars are also jacked-in. No expense for factory installers, no wiring, no soldering. Additional 100-line bays may be added with the same jack-in feature.

Then, too, the Leich Dial System saves you money on maintenance. Because it's all-relay, there's simply less to go wrong. A unique arrangement eliminates thousands of soldered connections.

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Despite satellites, the workhorse of systems communications will still be the same old cable pairs. But with alternate routing and VNL you'll regard them in a new light; and you'll take a more searching look at load coil spacings, net loss and return loss, while bias and sigma (old words with new meanings) will force you to correct trunks that don't meet minimum standards.

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AIRTRONICS Artificial Lines can be a vital tool in your technical training program for plant and engineering people. In them are combined all the essential elements for use in demonstration lectures, in laboratory classes — or both.

GENERAL SPECIFICATIONS

AIRTRONICS standard Artificial Lines accurately simulate a loaded or non-loaded cable pair of any desired length — from 600 to 39,600 feet.* Multi-position switches afford instant control over total length or load section lengths, so that coil spacings may be set to better than 1%, or as much as 10%. Common irregularities such as bridged taps, mixed loading or coils omitted can be introduced in a moment.

**Available with plug-in units for either #22 or #24 gauge cable, or mixed 22 and 24 gauge. Other commonly used gauges available on special order.*

For more detailed technical specifications, just ask us to rush you AIRTRONICS Artificial Line Brochure #1.021A. It will include equipment arrangements for a number of demonstration set-ups clearly showing the effect of equalizers, loading systems, reflections, singing points, and other characteristics.

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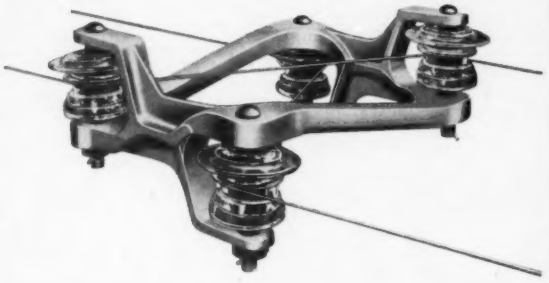
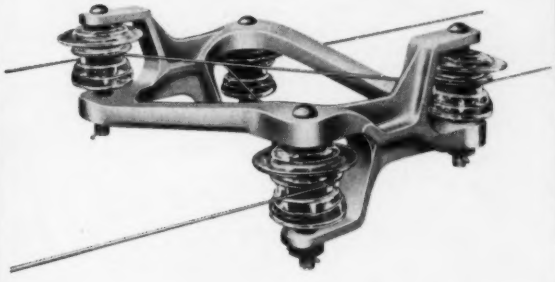
Case Aluminum High-Strength Span Transposition Brackets, originally designed for 8" wire spacing, *can* be used for 12" wire spacing, when turned to a right angle as follows:



EXAMPLE #1 — 12" Right over Left
SE-1786 right hand, 8" high-strength span transposition bracket gives a **12" Right over Left** wire transposition when turned to a right angle.



EXAMPLE #2 — 12" Left over Right
SE-1795 left hand, 8" high-strength span transposition bracket gives a **12" Left over Right** wire transposition when turned to a right angle.

Sold by leading Distributors in the United States.
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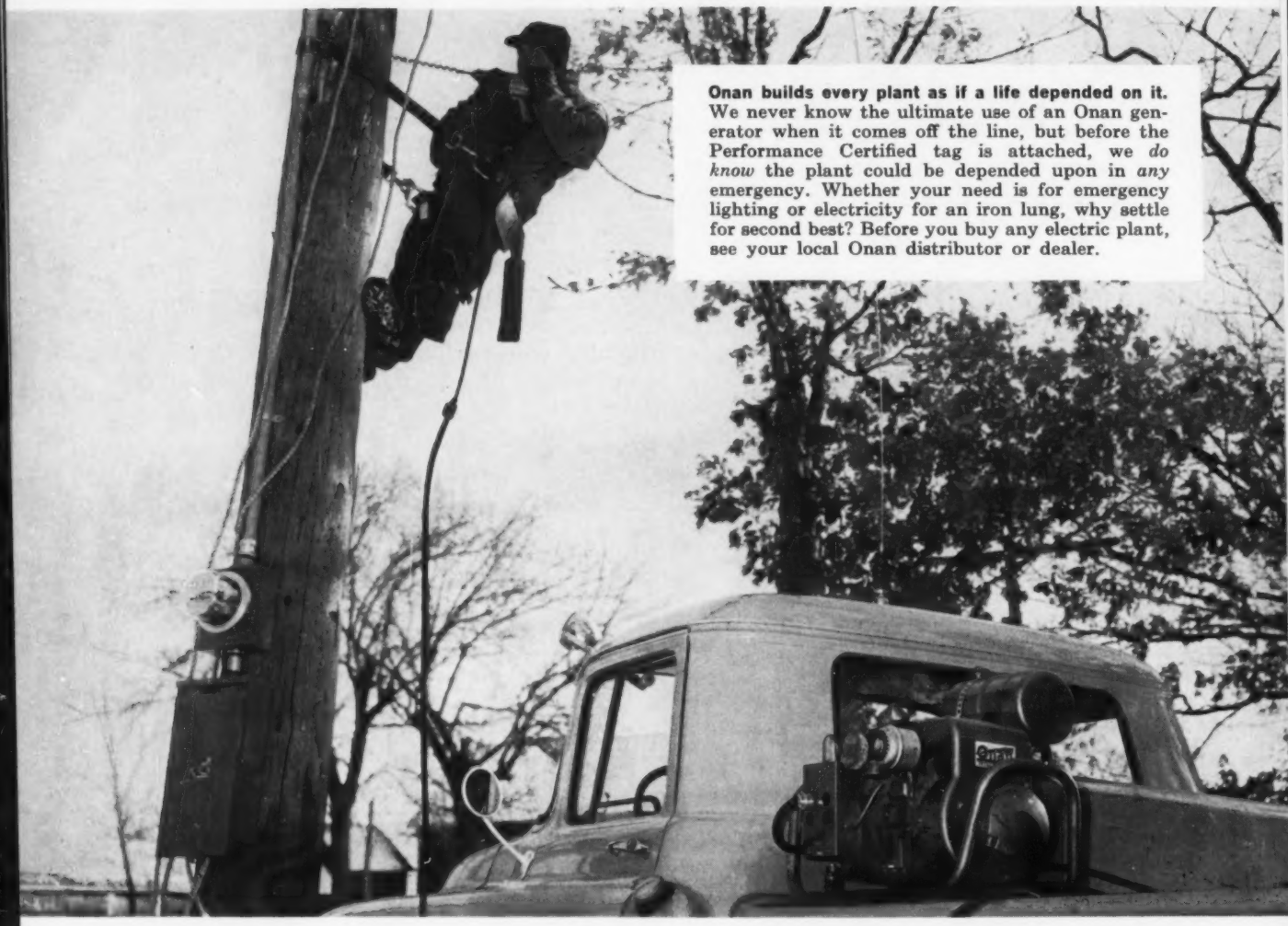

Onan builds every plant as if a life depended on it. We never know the ultimate use of an Onan generator when it comes off the line, but before the Performance Certified tag is attached, we *do know* the plant could be depended upon in *any* emergency. Whether your need is for emergency lighting or electricity for an iron lung, why settle for second best? Before you buy any electric plant, see your local Onan distributor or dealer.

Stellite coated exhaust valves and valve seats. One of toughest alloys known. Gives you up to 300% longer valve life than uncoated valves. It's the important details like this that make Onan more economical in the long run.

Exacting standards govern manufacture—years of specialized experience and extensive testing facilities control the quality of Onan Power Plants. Over 1000 different types and sizes of plants are produced by Onan.

use...even abuse

Onan electric plant still delivers full power after 12,197 hour test—equal to 487,888 miles

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Hours of running in and testing under full load are given *every* Onan before it is shipped. An independent testing laboratory then spot tests Onan Plants that have already been tested by Onan—double assurance that every Onan will deliver its full nameplate rating. Only then does an Onan production run qualify for Performance Certification.

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Saving Disconnects Is Pure Gold

By BEN SMITH*

SAVING DISCONNECTS is as much a part of service as selling new service, or selling our subscribers complete service arrangements. When we sell our customers on the need for retaining all or any part of our services, we not only maintain existing revenues, but also increase them through the greater use of service. We help the customer make a good decision.

Many people who request partial or complete disconnection fail to appreciate the full benefits of the telephone. Many times we did not do the *best* selling job on how to use the service when it was installed.

Therefore, an effective approach to save disconnects will encourage the customer to talk through the use of leading questions because:

(1) The objective is to draw out the *real* reason for the request.

(2) Many times the reason given can be turned into a reason why he should retain the service.

(3) This develops additional information which can be used in suggesting reasons for keeping the service.

(4) This gets customers to talk about how the service has been used, how convenient, etc.

(5) We can review with the customer the need for privacy, for saving steps, for protection.

We can illustrate with vivid word pictures the disadvantages of not having the service.

Questions like the following can be used:

"How do you use the service now —make many calls or receive them?"

"Doesn't the extension save your missing calls or running to answer the telephone?"

When it's cold and snowy, and a walk to the corner drugstore is a major undertaking, a telephone in the home is a comforting and useful service.

"Who will miss the telephone most —your daughter?"

"Had you thought of the protection? Are you alone in the house at night?"

"Where are you most of the time when the telephone must be answered?"

"One thing about a telephone—it has a low flat rate monthly charge, it's there to use to save steps, to give protection, answer business calls at night, or just to visit on the housewife's coffee break."

"Had you thought how lonesome it would be without your telephone?"

"What else that costs so little could you do without in order to keep your friend, the telephone?"

As a final effort, perhaps this: "How do you plan to do without the service?"

As a last resort, suggest a downgrade in main service or a partial reduction in supplemental services.

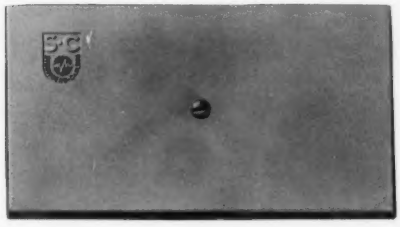
Today, the telephone is an integral part of family life. Nearly 90 per cent of our households have service. It's hard to conceive of anyone not having a telephone these days. The desire for comfort in the home, contributed to by extensions conveniently located, is not less important than it was.

Our need to save disconnects indicates that our efforts must be strengthened to keep this revenue in the bank. We need this money. Let's not overload our shelves with idle equipment. Our customers need complete service. It's up to us to sell them on this need, and to tell them how to use the telephone in order to get the most out of that usage.

"Who will miss the telephone most, your daughter?"

*Mr. Smith is General Merchandising Manager of Southwestern Bell Telephone Co., St. Louis, Mo.

More revenue and PROFIT with the *Petite* phone line



If your requirement is for frequency ringing, here is your best possible buy. The ringer for the PETITE phone is up to 50% smaller than other comparable ringers in the industry. Costs a lot less, too! The PETITE phone plus the compact ringer is your best buy.

Two-party identification: this PETITE model works with any make of CDO and MDO equipment. Now you can offer PETITE phones to your subscribers no matter what make or type of switching equipment you use.

Petite

A whole series of new features and new services make the PETITE* phone not just a telephone, but a complete line of telephone instruments.

These new developments—individually and in combinations—provide you with new and additional subscriber services . . . open many new doors to greater opportunities for revenue and profit.

Your Stromberg-Carlson representative has solid proof, and he's eager to show you the eye-popping facts and figures. In Atlanta call TRINITY 5-7467; Chicago: STATE 2-4235; Kansas City: HARRISON 1-6618; Rochester: HUBBARD 2-2200; San Francisco: OXFORD 7-3630.

**A trade mark of Stromberg-Carlson—General Dynamics.*

Message waiting light: This model of the PETITE phone is designed for hotels and motels . . . and for other PBX customers who have a requirement for this type of service. Many new prospects are opened up by this feature.

Better-than-ever pad: the excellent gripping qualities of the present bottom pad of the PETITE phone have been improved by the use of new materials and a new configuration. Manual PETITE phones also available with a glow-in-the-dark dial blank.

"Spotter" dial: this feature is available two ways. You can order any PETITE model with spotter dial or easily convert your present in-stock PETITE phones.

STROMBERG-CARLSON
A DIVISION OF **GENERAL DYNAMICS**

IN THE NATION'S CAPITAL

BY FRANCIS X. WELCH, WASHINGTON EDITOR
AND EDITOR, PUBLIC UTILITIES FORTNIGHTLY

Administration's wage-hour bill would change telephone operator exemption. Norman Clapp seen to have inside track for REA administrator post . . . Agriculture Secretary Freeman states emphasis will be placed on co-ops in REA telephone loan program.

THE KENNEDY administration moved forward quickly to consolidate its "honeymoon program" before the honeymoon atmosphere evaporates entirely. One goal which the new President has consistently promised the organized labor people was an early enactment of a broader wage-hour law. The administration's bill on this subject was dropped into the House hopper last week by Rep. James Roosevelt (D., Cal.), and an identical bill was subsequently introduced in the Senate by Michigan Senator McNamara.

The new bill is very similar to the 1960 bill which bore the name of Kennedy, then a member of the Senate. It calls for a boost in the minimum hourly wage from the present level of $1.00 to $1.25, in one-year stages of $1.15, $1.20, and $1.25. For the telephone people it also eliminates a part of the small exchange operator exemption in order to broaden the coverage of the act. It does not, however, entirely eliminate the present exemption of telephone operators' wages in exchanges serving less than 750 stations.

The language of the new Roosevelt-McNamara Bill provides, on this point, that the exemption should be cut down to the following: "(11) Any switchboard operator employed by an *independently owned* public telephone exchange which has not more than 750 stations." (New language underscored.)

In the language of the telephone business, this would seem offhand to make very little actual change at all in the present situation. That is because, in the language of the telephone industry, the words, "independently owned" simply means non-Bell. But that is not necessarily the language intended by the sponsors of the bill. Last year the Senate Labor and Education Committee, in interpreting similar language used in the old Kennedy Bill, made the following explanation:

"The (Wage-Hour) act in section 13(a)(11) now provides an exemption from both the minimum wage and overtime requirements for 'any switchboard operator employed in a public telephone exchange which has not more than 750 stations.'

"The bill amends this exemption to limit the exemption to 'any switchboard operator employed by an independently owned public telephone exchange which has not more than 750 stations.' . . .

"There has always been contention that the exemption was intended for small *companies* and *not small exchanges* which may be part of larger companies. The amendment proposed by the bill will have the effect of limiting the exemption to small independently owned *companies* which have fewer than 750 telephones.

"It is estimated that approximately 41,000 switchboard operators will be brought under the minimum wage and overtime provisions of the act by virtue of this amendment. . . ." (Emphasis in original.)

But it does not necessarily follow that 41,000 switchboard operators or anything like that number will be brought under the wage-hour law if the Roosevelt-McNamara Bill is enacted. First of all, the 41,000 figure probably includes all telephone switchboard operators at exchanges of less than 750 stations regardless of whether they are owned by Bell, large Independents, or small Independents. Now, it is a well-known fact in the industry that the Bell System companies are all unionized and none have taken advantage of the exemptions. The same is true, to some extent, of some of the large Independent companies.

According to an estimate of the United States Independent Telephone Association, there are about 30,000 operators altogether in the Independent segment of the telephone business. And of this total only about 5,000 are employed by companies having exchanges of less than 750 stations.

Now as to various other adjustments which need not be detailed here, this writer is of the opinion that not much more than 4,000 operators in the Independent telephone industry would be affected if the Roosevelt-McNamara Bill becomes law, as it probably will. This is not to say that it is a good bill, in this respect, or that the argument against the dilution of the present telephone operator exemption should not prevail. But looking at the future, from a practical standpoint, it would appear that the Independent industry should be able to write off this controversial wage-hour exemption problem, with all its ramifications of public relations etc., without too much dislocation.

Of course, the USITA will doubtless press for its policy of spreading out the elimination or curtailment of the telephone operators' wage exemption over a three- to five-year period. This also is to avoid a dislocation which otherwise might burden small companies if the present exemption were suddenly repealed *in toto*. But that probably will not happen in the light

of the relatively moderate change proposed in the Roosevelt-McNamara Bill. When you compare what has happened here, with some of the more spectacular recent developments of the Kennedy administration already, bouncing around in the electric power field, maybe the telephone industry can quietly count its blessings.

REA Changes?

Last week in this department a last-minute notice was carried about the new REA acting administrator to fill the vacancy left by the resignation of David A. Hamil. The acting administrator is John A. Baker, a former National Farmers Union official whose full-time job is that of director of credit services for the Agriculture Department. Secretary of Agriculture Freeman asked Baker to fill in the gap until a new administrator can be cleared with the White House. At the same time, *Freeman pointed out that the rural telephone loan program, to push area telephone coverage in rural territories, would be given special attention, with emphasis on cooperatives.*

Up to now, under the Eisenhower administration, commercial telephone companies (all Independents or non-Bell) have been granted a considerably greater number of loans and also a greater dollar amount of loans than cooperative borrowers. Freeman's statement suggests that this relationship may be reversed in the future under some new policy or interpretation of the telephone section of the REA act.

Norman Clapp, whose brother Gordon Clapp was chairman of the TVA for many years, was generally regarded last week as having the inside track for the post of REA administrator. Clapp is a former Wisconsin editor who failed to make the grade in a congressional race, but has the strong support of Senator Proxmire (D., Wis.). Clapp, who is 47 years of age, first came to Washington in the thirties as administrator to the late Sen. Robert M. LaFollette Jr. (R., Wis.). A Wisconsin-TVA relationship was also seen in the tentative designation of Joseph C. Swidler, long-time TVA counsel, to be chairman of the Federal Power Commission. Although a Chicagoan, who has since practiced law in Nashville, Swidler was an early business associate of David E. Lilienthal, former Wisconsin commission chairman and for many years member and chairman of the TVA.

Will Minnesota grow a regional branch of the REA for home development purposes? Congress will be asked to establish a farm electrification research laboratory in Minnesota to help farmers increase the quality of their products and cut costs of farm operation, according to Senator Humphrey (D., Minn.). He will introduce a bill to that effect this month, which he is sure Congress and the Kennedy administration will support. Humphrey said "we have barely scratched the surface" of possible uses for electricity in agriculture.

Humphrey suggested sufficient research might transform these ideas into solid accomplishments: (1) Improved plant growth through artificial lighting devices; (2) better insect control through radio frequency treatment and light-trapping facilities; (3) weed and weed-seed control through electromagnetic radiation; (4) improved nutrition and germination qualities in grain through high-frequency drying, and (5) greater milk and egg production through use of ultraviolet lamps. He said, research might eventually show how to use solar heating to condition forage and grain, and heat livestock shelters and residences. He boosted Minnesota as the home of such a laboratory because of the state's "resources and the progressive agricultural community necessary for success of research."

Convention Calendar
1961

Association	*Date*	*City*	*Hotel*
Kentucky	Mar. 7	Lexington	Phoenix
Texas	Mar. 12, 13 and 14	Houston	Rice
Iowa	Mar. 23 and 24	Des Moines	Savery
Nebraska	Apr. 5 and 6	Lincoln	Cornhusker
Mississippi	Apr. 17	Unannounced	Unannounced
Ohio	Apr. 18 and 19	Columbus	Deshler Hilton
Wisconsin	May 2 and 3	Milwaukee	Plankinton House
Indiana	May 9, 10 and 11	Indianapolis	Claypool
Illinois	May 17, 18 and 19	Peoria	Pere Marquette
Kansas-Missouri*	May 22 and 23	Kansas City, Mo.	Continental
Pennsylvania	June 5, 6 and 7	Pocono Manor	Pocono Manor Inn
Washington-Oregon*	June 15 and 16	Victoria, B. C.	Empress
New York	June 19, 20 and 21	Schroon Lake	Scaroon Manor
California	June 26, 27, 28, 29 and 30	Honolulu, Hawaii	Hawaiian Village
Alaska	Aug. 21, 22 and 23	Palmer	Unannounced
Arkansas	Sept. 11 and 12	Hot Springs	Arlington
Michigan	Sept. 19, 20 and 21	Grand Rapids	Pantlind
Nevada	Sept. 19, 20 and 21	Elko	Stockmen's
Rocky Mountain*	Sept. 20, 21 and 22	Boise, Ida.	Owyhee
USITA	Oct. 8, 9, 10 and 11	Chicago	Conrad Hilton
South Carolina	Oct. 23 and 24	Clemson	Clemson House
Virginia	Oct. 26 and 27	Roanoke	Roanoke
Oklahoma	Nov. 8 and 9	Skirvin	Oklahoma City
Florida	Nov. 26, 27 and 28	Miami Beach	The Carillon
North Carolina	Dec. 4 and 5	Pinehurst	Carolina

*Joint meeting

Sheriff Minow Takes over at FCC

Judging by the questioning which preceded Senate confirmation of the new boss of the Federal Communications Commission, the U. S. Senate is "out to get those varmints who have been plaguing the TV screens." Crime television programs — and especially Westerns — were ambushed, of all places, right in the Senate Interstate Commerce Committee.

The hearings were ostensibly called to determine the qualifications of the young Chicago attorney, Newton N. Minow, former law firm associate of Adlai Stevenson, to become chairman of the FCC, come next Mar. 1. But an angry posse of senators, led by precise New Englander, John O. Pastore (D., R. I.), spent much of the time taking pot shots at the horse operas. Senator Pastore allowed that "the American people deserve better than . . . gun shootings, killings, and horsewhippings."

Mr. Minow agreed, "I would do my best to see that there are more wide open spaces between Westerns and more public affairs than private eyes."

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Controlling The Cost of General Services

by W. V. BENJAMIN*

WHEN YOU are at the theater watching a good dramatic production, your interest is held by the action on the stage. You are not even aware of all the things that are being done behind the scenes, such as the manipulation of lights, special sound effects, and preparation for the next change of scenery.

All of these things are being done by invisible service forces, and their work is essential to make the production a success. However, the only time their efforts are noticed by the audience is when someone fails to carry out his assignment properly, and then the entire audience is conscious of the fact that something has gone wrong.

Service Forces Behind Scenes

The principal function of the telephone business is to provide communication services to its customers. Like the action on the stage, the work of providing these services is readily observed in the construction forces building new plant, the installer putting in a new service, and other craft forces engaged in various types of plant upkeep. However, in back of the scenes are various service forces who make it possible for the production forces to perform their work efficiently. These service forces maintain and operate the telephone buildings. They arrange for the original procurement of the motor vehicle equipment, and see that this equipment is properly maintained. They arrange for the material and tools required to keep the production forces working efficiently, and to meet the service dates required. In the larger companies all of these services are generally grouped under one service organization, which is designated by a wide variety of titles, but which may be adequately described under the classification of "general services."

Like the service forces in the dramatic production, these general service groups attract little attention as long as they carry out their responsibilities properly. However, when something goes wrong it oftentimes attracts a lot of attention, which increases in intensity as it moves up through the organization. In fact, most of these failures seem to follow the "Fundamental Law of the Pure Cussedness of Things." For example, the automatic elevators in the headquarters building may work perfectly for months without a single comment. But when one of the elevators suddenly stops dead between floors, who is inside pushing buttons frantically, and becoming more frustrated every second—you can be sure it is at least a vice president, if not the "old man" himself.

Although, the basic purpose of these general services is to make it possible for the production forces to do their work more efficiently, this fundamental principle oftentimes gets lost in the pressure of making sure that the job is completed on time. For example, if several years ago, a construction foreman could not complete a cable extension job because the cable terminals, which he had ordered, had been back ordered, he still remembers that, even though there hasn't been a cable terminal back ordered since that time. Whenever he has a cable job, he makes sure that all of the terminals required for the entire job are on hand before the job starts.

W. V. BENJAMIN

Personal Prestige Factor

Another factor that tends to overshadow the fundamental purpose of these services is the personal prestige factor that many times influences good judgment in determining what is really essential. The kind of a passenger car provided, and the frequency with which it is replaced, seems to be a status symbol to many management personnel. This is especially true if a comparable supervisor has a better car. You will undoubtedly receive a complaint stating, "Why that car of mine has over a hundred thousand miles on it, and should have been replaced a long time ago." Even though the vehicle was recently inspected, and found to be in excellent condition in spite of the mileage, you will have a difficult time convincing that supervisor that his car is still adequate for its function in the business, which is to provide basic transportation.

One of the reasons why the type and amount of general service requested by the operating forces tends to be more than required for essential service is the fact that the expense associated with these services is not generally identifiable in the operating cost of the group. Practically all of the expense involved in providing these services ends up in some form of general overhead expense. To simplify accounting procedures, these expenses are not directly associated with the group responsible for them, but are generally distributed over a broad base, such as a division,

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or the company as a whole. Consequently, the operating costs for a particular group will show no appreciable difference, whether the supervisor does an excellent job of managing these general services, or whether he follows the policy of getting all that he can get. Since his contribution to either an increase or a decrease in these costs becomes diluted throughout the entire division, or the whole company, the final effect upon the overhead loading is no longer measureable.

Expense Dollar Important

In controlling the over-all costs of these general services, higher levels of management tend to look more closely at the capital dollar, than they do at the expense dollar. Tools which cost over $25 are usually classified as capital, and the purchase of such tools generally requires approvals above the foreman level.

However, purchases of small expense tools are given much less attention, even though the amount of money involved in one year's purchases will probably be about four times as much as the purchases of capital tools. The purchase of a small office copying machine, involving a capital cost of a few hundred dollars, will probably require a lengthy analysis to justify the purchase. Once the purchase has been made, little attention is paid to the cost of the printing paper used, although it may not be unusual for the cost of the paper to almost equal the cost of the machine in one month's usage.

The expenditures associated with these general services are made up to a large extent of real cash dollars paid out to other suppliers. Such items as gasoline for and repairs to the motor vehicles, fuel for heating the building, electricity, and repairs to the building structure, are all direct cash outflow items. Consequently, any reduction that can be made through more efficient operation will result in a real cash saving, and not just a better score on an index measurement chart. But the job of obtaining reductions in the cost of these general services is not an easy one when you consider the fact that it involves a lot of people, throughout the entire organization, most of whom have different ideas on what is really required for essential services.

"Provision of such items as new buildings . . . involves the use of large amounts of capital, which are difficult to associate with an individual production group, so they are reviewed on a division or company basis. Perhaps this is one reason lower levels of management seem to be little concerned about capital requirements associated with general services."

Hard To Divide Capital Dollar

The provision of such items as new buildings, or the annual purchases of motor equipment, involves the use of large amounts of capital. Here, again, it becomes difficult to associate the capital requirements with an individual production group, so these requirements are usually reviewed on a division or company basis. If one individual installation group has more motor vehicle equipment than another group, or carries twice as much material in local stock, it will not show up in any of the regular production measurements for the group. Perhaps, that is one reason why lower levels of management seem to be little concerned about the capital requirements associated with these general services.

If the garage and service center building is a second rate rented building, which is the only thing available, local supervision can not understand why the company does not build a nice new building like it has in a nearby exchange. If the construction foreman has a yard full of cable, that somehow got ordered for delivery months ahead of the time the job is actually started, he can't see why anyone should be concerned about it. After all, the cable will all get used eventually, and it is not going to spoil in the meantime.

Inventory Vital Factor

There is a recognition that these things cost money, although local supervision is not too sure about how much. But the usual plea of the local force is that these things are necessary to improve production. If the question

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"An efficiently managed storeroom must take a calculated risk of occasionally being out of something, although this might result in some increase in production costs. However, the controlling factor is the frequency of out-of-stock occurrences. If the penalty of being out of stock occasionally is still less than the cost of carrying additional inventory, then it is good management to hold the inventory to that level."

Pa. Bell Inaugurates $2 Million Data Processing Center

THE INAUGURATION of a new electronic data processing center at Conshohocken, Pa., by Bell Telephone Co. of Pennsylvania, has provided a major breakthrough in mechanization of customer billing in the Bell System.

In Conshohocken, near Philadelphia, during December, 1960, the first customer bills were prepared and printed by a 2-million-dollar computer complex that will soon handle all billing and collection information for about 300,000 telephone subscribers in the suburban Philadelphia area.

This installation culminates five years of work by Bell System task forces, whose mission was to find a solution for the growing problem of record-keeping and administrative reporting. An appropriate computer system having been chosen and feasibility studies completed, Bell of Pennsylvania was selected for a pilot operation on the strength of its experience in automating a variety of complex business procedures.

Once the Conshohocken installation is in full operation, similar data processing centers will be established elsewhere in Pennsylvania and throughout the Bell System.

The central unit of the Bell installation is an IBM 7070, a large scale digital computer. It is a transistorized, expandable modular system, augmented with auxiliary components to form a tape-oriented configuration. Complementing it are two IBM 1401 "satellite" computer systems for input-output conversion operations.

The 7070 computer will read 62,500 magnetic tape characters per second, and has a magnetic core storage capacity of 100,000 decimal digits. Recall of stored data requires six micro-seconds per digit.

A unique feature of the system are the special units which convert central office records from automatic message accounting tape to magnetic tape; the 1401 system translates information from teletype tape, mark-sense and also punched cards to magnetic tape.

Tape handling features of the system include four speeds of tape operation, high-speed rewind, tape compression through high-order zero elimination and automatic alphameric or numerical mode selection.

The operator's console control contains a typewriter which provides a log of all manual console operations affecting the stored program, automatically writes a record of all machine halts, and types out messages, under program control, to the operator.

Programming is simplified and expedited by use of IBM Autocoder, an assembly that considers the type of data involved in a given operation and then chooses a set of actual machine instructions to handle the operation most efficiently.

A versatile group of logical functions is incorporated in this computer system, for use in decision-making applications. These include index word operations (in storage), compare operations (low, equal and high), other branch instructions, and miscellaneous operations such as editing and sign changing.

Records for many customers served by Bell of Pennsylvania's Conshohocken accounting center are now stored on magnetic tape, including name and address, equipment itemization, deposit records, coin-telephone information, directory delivery addresses, credit data, payments and toll and message unit billing. Charges, credits and other appropriate information are posted to the tapes daily. In its daily review of customer records, the computer identifies unpaid accounts and produces reminder notices or collection notifications as appropriate for the business office. It also reviews credit ratings, reclassifies accounts, analyzes deposit records, prepares refund checks, and performs similar routine tasks.

Computer feeds information to this printing machine which types customers' bills or statistical data. The printer can turn out nearly 100 bills a minute. At right is Miss Sally Owens, of Norristown, who operates the machine.

Advantages of Bell's new data processing installation include faster and more efficient billing service, a more up-to-date record of charges and

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1890-Today: Miss Sally Owens (left) and Miss Anne Curran dramatize the progress in telephone billing at a press preview of Bell Telephone Co. of Pennsylvania's electronic data processing (EDP) center—the first EDP center in the Bell System for billing and collecting operations.

Depreciation and Small Companies

They should study possible benefits in deducting same depreciation on their books as they take for taxes.

By WILLARD F. STANLEY

FOR MANY YEARS, it has been the practice of electric and gas utilities and larger telephone companies to charge on their books for depreciation a different amount from that deducted for income tax purposes. Almost always, the amounts so deducted on the books are smaller than those deducted in arriving at income tax liability.

In recent years, in the case of many utilities, this differential has been substantially accentuated by the factors of accelerated amortization and liberalized depreciation, since the utilities did not increase their book charges by reason of the larger amounts deducted for tax purposes because of these items. This has had the effect of widening the gap between book and tax depreciation in these instances.

The practice of these utilities in taking lower depreciation for book than for tax purposes originated many decades ago when the prevalent formula for book depreciation was a percentage of gross operating revenues, less expenditures for maintenance. This inevitably created different deductions for depreciation on books and for taxes. Then, too, certain "tax-free" reorganizations affecting such utilities resulted in carrying forward to the successor company, for tax purposes, the cost base of the predecessor company, whereas for book purposes, the regulatory commissions having jurisdiction required the property to be carried on the books of the successor either at current value, or, more often, at so-called "aboriginal" cost (i. e. cost to the person first constructing the facilities). This difference in book and tax bases, which was often substantial, necessarily resulted in different amounts of depreciation charges for these two purposes.

Almost all utilities so affected have, over the years, changed their accounting methods so as to deduct depreciation on their books on a "straight-line" basis (i. e., an equal annual percentage of gross property) instead of under the gross operating revenue formula. But the annual depreciation deducted on the books, though changed in amount, usually still remained lower (and often considerably lower) than the amount claimed and allowed for income tax purposes. As mentioned above, this differential was augmented by accelerated amortization and liberalized depreciation, as these items became law and were adopted by the various utilities.

It was to the interest of these large utilities not arbitrarily to increase their book depreciation to the amounts charged for tax purposes when the change-over from the "gross revenue" method to the "straight-line" method occurred, because to do so would have reduced the earnings available for their common stock and thus tended to reduce its market value to the detriment of their common stockholders.

Such a step would also have tended to increase the cost to the company of common stock financing which might be necessary to provide funds for expansion. For the same reason, no increase was made by them in book charges for depreciation when accelerated amortization and liberalized depreciation were, respectively, provided for in the tax law and availed of by the utilities, with the result that, today, the great majority of utilities of the character first above mentioned show a considerable differential between the amounts annually charged for depreciation on the books and the annual deductions for depreciation for income tax purposes.

It would appear favorable to maintain the present situation with respect to all utilities having public participation in their common stock equities, and where, consequently, per share earnings on the books, rather than cash income, are the most important element.

However, there may be a substantial number of small companies in the telephone industry where there is no public participation in the common stocks and where, consequently, the owners are primarily interested in cash earnings rather than per share earnings for the common stock as per the company's books. To the extent that these small companies have been following the electric, gas and large telephone companies in deducting smaller amounts on their books for depreciation than taken for income tax purposes, they might find it beneficial to reverse this process, where legally permissible, and increase the book charges for depreciation to the same amount claimed and allowed for income taxes.

Those companies which have availed themselves of the benefits of accelerated amortization and/or liberalized depreciation, would augment the increase in their book depreciation charges when bringing them up to the level claimed for taxes. This would further lower their book earnings, which would not be of practical importance, since they have no public participation in holdings of their common stock, but it would strengthen their position in regard to rates and, consequently, tend toward higher cash income.

If their current rate of return was somewhat high, and, accordingly, their rates were, or might soon be, under scrutiny by their regulatory bodies, the reduction in earnings caused by the higher depreciation charges would tend to justify their current return. If their rate of return was currently on the low side, it would be further reduced by the increased depreciation charges arising from the change-over in accounting method, whereby depreciation was increased on the books to that taken for taxes, so that they might become equit-

ably entitled, immediately or at some earlier date in the future, to a rate increase. In any case, the lower book earnings arising from the greater depreciation deductions could not fail to improve their relative rate positions, provided the change was made with the specific or tacit approval of the regulatory body having jurisdiction.

All the foregoing assumes that the change-over in accounting treatment would receive the approval of the regulatory commission having jurisdiction, if such commission customarily extended its jurisdiction over accounting practice by requiring its specific approval of such a change in method. The extent of jurisdiction exercised by regulatory bodies over accounting methods and procedures may vary considerably as a practical matter, as between states, even though all utilities may be subject to a uniform system of accounts. In some states, such a change might not require specific commission action, while in another, special commission approval might be required. The necessity for commission approval should, of course, be definitely ascertained by the telephone company before authorizing the change in accounting.

If the board of directors, or other equivalent governing body of a small telephone company, should decide that the amounts deducted for depreciation for income tax purposes represented a fair charge on the books for this purpose, it seems probable that, in many cases, where the commissions exercise jurisdiction over such matters, they would be willing to acquiesce in the new policy. The amount of depreciation deductible for taxes either flows from allowances given by specific federal tax law, or represents the Treasury Department's opinion as to the correct allowance (with the interest of the Treasury being to reduce the amount allowed as far as possible). Therefore, it would seem that the governing body of a telephone company, which decided upon such a policy change, could hardly be criticized for adopting the higher (and, therefore, more conservative) amount of book depreciation deduction, particularly since the latter had been sanctioned either by law, or by specific or tacit treasury approval.

The benefit to the small telephone company in the form of lower income for rate-making purposes could extend beyond the level above discussed. If the governing body of the small company (after receiving necessary commission approval, if needed) should determine, as a matter of policy, that the proper amount of depreciation charges was that taken for tax purposes, then it would logically seem to follow that the depreciation reserve accumulated on the books of the system was inadequate, since it would be based on the aggregate of charges for depreciation made at lower levels for previous years.

Such governing body could, logically and properly, conclude, in its discretion, that it was desirable to increase the accumulated depreciation reserve to reflect an amount based upon an accumulation in accordance with depreciation claimed in previous years for income tax purposes. The amount of such inadequacy in the depreciation reserve might, in many cases, prove to be a considerable percentage of the property account, and, in such cases, would constitute an amount too large to be written off in a single year without unduly reducing income. Accordingly, the governing body of the small company might determine, if it wished, that such inadequacy should be made up by charges to income in equal annual amounts over a forthcoming period of say 10 to 15 years. Such action might also require approval of the regulatory body to which the company is subject. These periods would resemble those provided by the Federal Power Commission for electric utilities in writing off to income, the excess of the book carrying value of their properties over amounts representing the original costs thereof.

Such an annual write-off, which would be in addition to the increase in regular annual book charges for depreciation, would further strengthen the position of the telephone company with respect to rates; thus further justifying current rates if they represented a rate of return on the high side, and enhancing the right to a rate increase if the current rate of return has been relatively low.

A telephone company with $100,000 of gross property account; a depreciation reserve of $25,000 and an annual charge for depreciation on the books of 3 per cent of gross plant, or $3,000; with a depreciation deduction for tax purposes of $4,500, including (we will assume) liberalized depreciation, would, if its governing body voted to thereafter charge depreciation on the books at the same rate as that claimed for taxes, reduce its book earnings by $1,500 a year. To the extent that it could transform this loss in book earnings into higher rates, it would be increasing its annual *cash* income by a like amount, or $1,500. If the accumulated depreciation reserve were figured at say $40,000 after reflecting depreciation in past years at the rates claimed for tax purposes, and if a 10-year period were elected by the governing body as the period for the write-off to income to restore the reserve to an adequate amount, this would lower annual income another $1,500 per annum, making the total annual reduction therein (and consequent assumed possible increase in *cash* income) $3,000 for each year in this 10-year period.

While these amounts would be small to the large-sized utilities, they can be important when related to smaller telephone companies. Under similar circumstances, a telephone company with a $50,000 gross property account would decrease its book income by $750 per annum by virtue of the above described annual increase in book depreciation charges, and this figure would be doubled, to $1,500 a year for 10 years, were the governing body to provide for a write-off to income to restore a proportionate inadequacy in the depreciation reserve over a 10-year period.

The higher depreciation claimed annually for book purposes, with or without the write-off annually of the inadequacy in the depreciation reserve above referred to, would tend to reduce the net property base, and consequently, the amount of return to which the system was entitled on a rate-making basis.

There is not sufficient space here to go into detailed calculations necessary to develop the theoretical reduction in rate entitlement which might arise from this source. It is sufficient to say that the benefit to the small telephone company, which now follows the electric, gas and large telephone companies in deducting a considerably lower depreciation on its books than it takes for income tax purposes, from authorizing depreciation deductions equivalent to those claimed for taxes, should far exceed, for many years, the loss inherent in the lowering of the net base of the properties due to the additional depreciation so claimed on the books.

Where the governing body of the small telephone company elects to write off the assumed depreciation reserve inadequacy out of charges to income over say a 10-year period, the benefits during these 10 years will still further exceed the minus sign derived from the lowering of the net property base through increasing the accumulated depreciation reserve in this manner. Even after the 10-year period of write-off was at an end, the net result of the change in depreciation policy should still carry an entitlement to a larger amount of return for rate purposes, despite the decrease in net property arising from the 10-year write-off.

Fundamentally, the large and small telephone companies appear to have definitely opposite interests in the mat-

(Continued on page 63)

THE Plant Man's Notebook

BY RAY BLAIN, TECHNICAL EDITORIAL DIRECTOR

IT WOULD APPEAR, there might be a need for a four-wire drop wire in the telephone industry, if such an item could be made available. In this connection, the U. S. Army Signal Corps has developed a four-wire field wire for military use which is proving entirely satisfactory. If a four-wire drop wire were available, it could be installed in all cases where a second line may be required in a residence. Since two-telephone line homes are increasing in number these days, it is believed that this four-wire drop wire might prove to be an economical advantage.

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A bundle of 10 plastic pipes was installed under the Tuolumne River near Modesto, Cal., recently, by the Pacific Telephone & Telegraph Co. This pipe comes in 30-foot sections and is 3½ inches in diameter. The 380-foot length was pulled across the river. The lightweight pipes were filled with water and weighted with concrete blocks to help sink them into the prepared trench in the bed of the river. The pipe is buried 9 feet below the bottom of the river. The river at this point is about 6 feet deep.

One pipe will be used immediately to carry a new cable between Modesto and Ceres, Cal. The others will be used to carry additional future cables, as required.

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Nationwide teletypewriter exchange service will be cut over from manual to dial operation some time in the fall of 1962. Individual stations will then be able to dial the exchange and station they wish, and their typed message will travel over the regular telephone network in the same manner as a telephone call.

The cut-over will reduce the number of TWX operating centers for over 50,000 TWX installations from 103 to 17.

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The REA reports that loans approved in 1960 will help provide new or improved service for 190,000 subscribers. This increases to 1,470,000 the total number of subscribers who will benefit.

In 1960, telephone loans approved amounted to 106.9 million dollars; and funds advanced to telephone borrowers by REA totaled 105 million dollars.

There were 48 new borrowers in 1960, raising the total to 727. Total loans to date to all borrowers amount to 737 million dollars.

Of these REA borrowers, 515 are commercial companies and 212 are cooperatives.

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It has been suggested that as we now have ANC, why not use Roman numerals on our dials. After all, some clocks formerly made use of Roman numerals, but don't ask us why.

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It is reported that 1,540 engineers have come out of Communist East Germany in the past eight months. Furthermore, the flight of professional people has left many areas of East Germany with only one doctor to each 8,000 inhabitants.

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Erle Stanley Gardner, creator of Perry Mason, and who published his 100th book some time ago, is a subscriber on the California Water & Telephone Co. exchange at Temecula, Calif.

Until 1951, Mr. Gardner, the world's most renowned mystery writer, preferred not to have a telephone on his ranch. Instead, he had an Indian runner who was kept busy delivering messages between the ranch and the Temecula office. And, when he found it necessary to call his publishers in New York, Gardner would go into the Temecula office to make the call. Now, however, his ranch is equipped with a business key-type telephone, three off-premise extensions, a hands-free set, an intercom line, a line holding unit, an exclusion key, and a battery feed unit for the buzzer system, plus associated lights, a buzzer, and the like for the key telephone.

Because his ranch is remotely located, Mr. Gardner paid $2,825 in line extension charges when his telephone system was originally installed.

As might be expected, Mr. Gardner is a good telephone subscriber, his monthly bill averaging close to $300.

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Echo I satellite, the 100-foot-diameter balloon, at the time this is written, is still reflecting communications data, despite wrinkles on its aluminum-coated surface which cause heavy signal fading.

The balloon's wrinkles, which are causing a reduction in the intensity of the received signal, result from three factors: Loss of gas pressure inside the sphere; Echo's path in and out of the earth's shadow where temperature variation is extreme; and the effects of air drag.

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We notice that considerable interest is being taken in wire and cable plows of late so we decided to have a look at the latest improvements in this type of equipment.

We found that one model will handle all types of wire and cable up to 3¼ inches outside diameter, and bury it to a depth of 42 inches. This plow will also mount one cable reel 55 inches in diameter, or two reels 40 inches in diameter.

In addition, there is a front-lawn-type wire plow that weighs only 125 pounds. This tool is designed to plow wire in lawns, parkways, airports, etc.

The blade is only ⅝-inch thick with a 7/8-inch wire tube opening. It will bury wire to a depth of 18 inches. This plow leaves no loose dirt and you can run a lawn mower behind it without difficulty.

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A new span clamp is designed to accept the bails of all drop wire clamps without deformation of the bail. Once installed, it will maintain a secure point of attachment by preventing the drop wire clamp from dancing off the wire form. This clamp is rated as suitable for three drops under full-installed tension, plus wind and ice loading.

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The "Trimline," a desk-type telephone with a dial in the handset, is being product-tested by 200 Bell System residence customers in Richmond, Va.

The finger wheel is smaller than on the standard telephone dial, but the holes are the same size.

It would seem that this type telephone may have numerous advantages over the conventional types. Permitting the dial to be positioned for the best vision of the caller should contribute to more accurate dialing. The dial in the handset should also increase the popularity of the drive-up pay station.

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On the Line, published by the Australian Post Office, describes how 4-foot-diameter reinforced concrete pipe is being used for manholes on small duct runs. These sections of pipe have two 18-inch x 18-inch slots cut by the manufacturer for duct entrance. The bottom is poured concrete, and the top is precast with a suitable opening. This type of manhole has been used in Australia to provide holes up to 16 feet deep to cross main highways.

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Gaines Dial is supervising central office foreman for the Southern Bell at Columbus, Ga., and who says there is nothing in a name?

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Crosstalk

It is becoming increasingly difficult to support the government in the style to which it has become accustomed.

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Everything comes to him who hustles while he waits.

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Arrogance is said to be the privilege of little people.

Plant Man's QUIZ

By RAY BLAIN, Technical Editorial Director

Q. What type of dehumidifier is recommended for use in an unattended dial exchange to prevent damage from moisture?

A. We suggest one equipped with at least a ⅓ HP compressor. This should dehumidify an average enclosed area up to 13,000 cubic feet.

This size should also remove up to 4 gallons of water from the air every 24 hours. It is equipped with fittings for connection to a permanent drain, if desired. It may also be equipped with a water container.

A positive electronic overflow switch automatically turns on a signal and turns off the dehumidifier when the water container is full. After the water container is emptied and replaced, the unit will automatically turn on.

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Q. We are looking for a way to place pressure on a trunk cable at a point several miles from the office. Is there any method by which dry air can be used for this purpose?

A. It is suggested that you consider the use of a pole-mounted dehydrator. This device is equipped with a motor compressor of the dry air desiccant type. It is easily installed at any point where commercial electric power is available.

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Q. When an aerial telephone cable is strung on power line poles, how should it be protected?

A. REA specifications, Section 815, specify the following type protection: "Where telephone cables are attached to the same poles used for electric supply circuits of the multi-grounded neutral type, whose voltages are less than 15,000 volts to ground, the cable sheaths and strands should be interconnected to the multi-grounded neutral. These interconnections should be made at the poles where the joint use arrangement begins and ends, even though the joint use arrangement may involve only several spans. If, in addition, the cable diameter is small and the joint use arrangement is longer than 1.5 mile, additional interconnections should be placed in a similar manner at intervals not exceeding one mile.

"Where telephone cables are attached to the same poles used for electric supply circuits of the non-multi-grounded neutral type, cable sheaths are grounded by means of their connections to the central office ground—provided the sheath is electrically continuous—and by such other grounds as it may be desirable to place for lightning protection."

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Q. When a pole is reinforced by the use of a stub, what method is recommended for attaching the stub to the pole?

A. Two different types of stubbing are now in general use. On light lines of poles 30 feet or less, bolts are generally used. The stub is bolted to the pole and bolts are placed through the stub and pole at right angles to the first bolts to add strength and prevent splitting.

For heavier lines, metal bands are recommended for attaching poles to the stub. Two to four bands are used, depending upon the strength required. These bands may be procured from your telephone supply house.

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Q. When one provides pre-wired telephone construction in a new home, is the use of conduit necessary, or desirable?

A. In our opinion, the use of conduit is probably desirable although it is not absolutely necessary.

When conduit is provided, wiring changes can be made without difficulty. It is usually possible to arrange with the building contractor to install the necessary wiring without conduit and outlet boxes so that telephones may be installed later, as desired. This wiring must be installed, however, during the building construction and should cover all areas where instruments may be required at a later date.

Courts and Commissions

York (Pa.) T&T Company Allowed 5.73% Return

The York Telephone & Telegraph Co. on Jan. 30 was given permission by the Pennsylvania Public Utilities Commission to raise its rates by $1,136,853 annually (TELEPHONY, Dec. 3). This increase is $378,645, or 25 per cent, less than the company's original request.

At the same time, the commission approved withdrawal of formal complaints by the city of York and the county of York against the original asking, a move agreed to when the company decided to reduce its rate request, as a result of a subsequent study of its needs, and a desire to avoid expensive litigation and postponement of an increase.

The increased rates will give the company a 5.73 per cent rate of return, as compared with the 6.72 per cent return originally sought.

The company's return for the year ending Aug. 31, 1960 was reported to be 2.93 per cent.

Factors considered in allowing the rate increase, the commission said, were the York company's expenditure of $6,813,000 on plant construction last year and its plans to spend another 4 million dollars this year.

Effective Jan. 31, the company's Greater York base rate area was extended to about three times its former size, thus eliminating mileage charges for one and two-party subscribers in the extended area. Charges for subscribers outside the area were also reduced.

The company also plans to substitute four-party for multi-party service in this expanded area.

Mo. Supreme Court Studies Constitutionality of Use Tax

The Missouri Supreme Court on Jan. 27 held a hearing on the constitutionality of a 2 per cent use tax levied by the state on companies that buy materials outside the state but use them in Missouri.

The law had been held unconstitutional by Circuit Court Judge Sam C. Blair of Jefferson City in cases involving the Southwestern Bell Telephone Co. and the Missouri Pacific Railroad. The Missouri attorney general's office had appealed Judge Blair's decision to the supreme court.

A spokesman for Southern Bell stated that "service is an intangible item and cannot produce a tangible end-result that would classify our transportation of electrical signals as a product to be taxed under this law."

SBT&T and Missouri Pacific had challenged the constitutionality of the law on the basis that it discriminates and fails to treat all taxpayers alike. They claimed the law is impractical to enforce because of vague terminology used in exemptions. They cited the phrases "if not readily available in the state" and "an integral part" of the business or manufacturing processes as being vague and indefinite.

Grant Florida Increase; Extend Base Rate Area

The Florida Railroad & Public Utilities Commission on Feb. 2, granted the Northeast Florida Telephone Co., Inc., Macclenny, a rate increase designed to produce additional annual revenue of $11,682. The commission also authorized Northeast Florida to extend its base rate area.

The company, which was incorporated in 1955, had 282 telephones in service at that time. In the commission's test year, 1959, some 1,042 telephones were in service.

Northeast Florida has been largely financed by REA loans. It had had an annual loss since 1955 but by 1959, was able to show a rate of return of ½ of 1 per cent. The company had requested an annual revenue increase amounting to $16,338, which would have brought the rate of return to a proposed 3.51 per cent.

The commission, however, declared that "in keeping with the financial position and growth history" of the company, an annual revenue increase amounting to $11,682 would be more appropriate.

Under commission calculation, total operating revenues of the company would be $76,968. After deduction of $65,392 for operating expenses, net operating income was figured at $11,576. On an adjusted rate base of $434,909, the commission computed a rate of return of 2.66 per cent, which it termed reasonable.

Hearing on Nebraska Rural Service Area Dispute

The Nebraska Railway Commission on Feb. 9 was to have heard the applications of the Capital Telephone Co., Hickman, and of the Lincoln Telephone & Telegraph Co. for changes in service areas (TELEPHONY, June 18, 1960).

On June 3, last year, the state's high court reversed a decision of the commission (made on July 18, 1958), which established boundary lines between the LT&T exchange at Lincoln and the Martell exchange of Capital. The commission earlier established the boundaries when the Capital company purchased the Martell company. The appellants in the case were farmers, formerly on the Lincoln exchange, who were transferred to the Martell exchange. An elevator company, another rural appellant, which formerly had service from both Lincoln and Martell, objected because the commission ordered the Martell service removed. All appellants asked to have their original service restored.

In the current application of Lincoln T&T, the company wants to discontinue service to the rural subscribers living in the Martell exchange area of the Capital company. Capital wants to discontinue service to the elevator company located in the Lincoln area, which currently has service from both companies.

In the June 3, 1960 ruling of the Nebraska Supreme Court, the commission's approval of the changes was overruled by the court on the grounds that the appellants had not had sufficient notice. The February, 1961 hearing was set up to allow all parties such notice.

Iowa Company Reports Sale

Sale of the Halbur (Ia.) Telephone Co. to the Manning (Ia.) Telephone Co. was announced on Jan. 26 by John Schenkelberg, secretary-treasurer of the

Halbur company. The new ownership, it is reported, will add more toll-free lines to link Halbur with the Carroll exchange of the Northwestern Bell Telephone Co., for more adequate service than is presently available.

Authorize Exchange Sale, 19 Switch Lines in Minnesota

The Minnesota Railroad & Warehouse Commission, in two separate actions on Feb. 2 and 3, approved the sale to the Mabel Cooperative Telephone Co., of the Mabel Telephone Co., and of the Mabel Telephone Exchange Co.

The commission also approved the sale to Mabel Cooperative of the properties of the following:

Riceford Telephone Co.; Minnesota & Iowa Mutual Telephone Co.; North Star Telephone Co.; Banner Telephone Co.; Hesper Farmers Mutual Telephone Co.; Mabel Valley Telephone Co.; Newburg Central Telephone Co.; Belleville Telephone Co.; Richland Prairie Telephone Co.; Hesper & Southwestern Telephone Co.; Newhouse Telephone Co.; Welch Telephone Line Co.; Northeastern Winneshiek Telephone Co.; Newburg Valley Telephone Co.; White Star Telephone Co.; North Star Telephone Co. (telephone line 25); Preble & Choice Farmers Telephone Co.; and of the Preble & Blackhammer Telephone Co.

Asks to Purchase Four N. Y. Companies, Change Name

Approval of the merger of five New York telephone companies was sought from the New York Public Service Commission on Jan. 31.

Fillmore Telephone Co. has asked for authority to acquire the Hammondsport Telephone Co.; the Pulteney-Branchport Telephone Co., Branchport; Jasper-Steuben Telephone Corp., Jasper; and the West Valley Telephone Co. Fillmore also asked to change its name to the Iroquois Telephone Co.

Permission was also sought by Fillmore to borrow $1,551,000 from the Rural Electrification Administration and to issue stock to be bought by the Independent Telephone Corp.

Plans call for the conversion of the Hammondsport and Pulteney-Branchport systems to dial operation.

Ala. Stock, Incorporation, Rate and Loan Requests

The Alabama Public Service Commission on Feb. 10 was to have heard the request of the Notasulga Telephone Co. to issue $29,400 worth of stock and to incorporate as the Notasulga Telephone Co., Inc.

The company also sought approval of a rate increase, and authorization for a loan from the REA to finance a dial system and other improvements.

General of Ohio Gets Raise; Rate Band System Changed

The Ohio Public Utilities Commission on Feb. 9 granted General Telephone Co. of Ohio a $1,626,496 annual rate increase—slightly more than half the $2,941,651 the company had requested (TELEPHONY, Jan. 17, 1959).

Taxes will take $865,760 of the $1,626,496 total, leaving $760,736 of the annual increase for the company.

Clare E. Williams, president of General of Ohio, said the new rates will become effective on the PUCO's acceptance of tariffs which the company will promptly file with the commission.

He pointed out that it has been more than eight years since the Ohio company has had an increase in rates. He added:

"This is extraordinary in that we have held the line on rates during this long period of inflation.

"Since the last rate increase, which was based on the company's plant in service and on costs of operating more than eight years ago, the company has spent nearly 64 million dollars in expansion and improvement of service.

"In fact, during the period of slightly more than two years since our case was filed with the commission, gross additions to plant have amounted to approximately 22 million dollars. Our current construction of new and improved facilities is gong on at the rate of about one million dollars a month.

"What's more, during this period, operating costs for wages, taxes and other day-to-day expenses have increased from 10.7 million dollars annually to 16.6 million dollars a year."

Mr. Williams said the company is appreciative of such much-needed relief as is provided by the commission's order. He added: "But it is regretted that the PUCO did not see fit to grant us the full amount of our request, which in our opinion was the proper amount necessary to establish earnings that would be at a fair and reasonable level."

The improvement in revenues resulting from the new rates, he remarked, will improve earnings which are now unreasonably low. The rate of return, he said, will continue to be less than is reasonably proper.

The commission's order effected some changes in the rate banding arrangements, contrary to the company's proposal. One change stemmed from the commission's decision to base rate bands on the number of main telephones, not the total number of telephones in a calling area.

"The company is not adverse to this move," Mr. Williams said, "and recognizes that it has merit in view of the extraordinary development of extension telephones in recent years."

In effect, the commission's order will call for rate bands to be based on the total number of main telephones, excluding extension telephones.

"The banding principle," Mr. Williams noted, "is a device to equitably distribute over the total number of customers the total operating revenue requirements."

In another move, the commission elected to establish rate differentials between types of service, namely, dial and manual.

President Williams declared the company is not in accord with that decision, since a particular type of operation is not necessarily a proper criterion of value of service.

He stated:

"In the final analysis, rate differentials are properly based only on differences with respect to the number of main telephone stations which are available to the customer without paying a toll charge.

"It is obvious that the commission is trying to encourage telephone companies to convert manual exchanges to dial service.

"In this connection, however . . . all the company's remaining manual exchanges definitely are programmed for dial conversion within the near future."

The commission also gave General of Ohio permission to adjust rates of toll calls made entirely on the company's facilities. This, however, will only result in such rates being made comparable to rates applied to other intrastate calls involving the facilities of other telephone companies.

General of Ohio operates more than 213,000 telephones in more than 500 communities.

OK Purchase, Service, EAS, Dial Rate and Raise in Ill.

The Illinois Commerce Commission, it was reported on Feb. 10, has recently taken these actions:

It has authorized the Raleigh Telephone Co., a newly formed corporation, to purchase the property of William H. Upchurch, doing business as the Raleigh Independent Telephone Co.

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The Inland Telephone Co., Champaign, was authorized to operate in the territory now served by Cooksville Telephone Co. Action on Cooksville's petition to sell its property to Inland is pending (TELEPHONY, Dec. 10).

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The Middle States Telephone Co. of Illinois, Des Plaines, was given permission to apply its applicable dial rates to the recently acquired Topeka dial exchange of the Farmers Mutual

Telephone Co., using the same rates as for its Havana exchange; and to provide extended area service (EAS) between Havana and Topeka.

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In a fourth commission action, Marseilles Telephone Co. received permission to put into effect a rate increase which would raise its annual revenue by $15,000.

Answering Service Sues Wis. Bell; Says Rates Excessive

A $337,000 suit has been filed in Wisconsin Circuit Court against the Wisconsin (Bell) Telephone Co. by the Milwaukee Telephone Secretaries, Inc., it was reported on Feb. 5.

The suit contends that the company placed the answering service at a competitive disadvantage by "charging excessive rates for apparatus and forcing it to maintain unnecessary equipment."

Also charged was that Wisconsin Bell used a method of computing installation costs different from that used for competitors.

W. E. McGavick, Wisconsin telephone company counsel, said the allegations were "without foundation and contrary to the facts."

Introduce Credit Card Fraud Bills in N. Y. and Ind.

Bills have been introduced in the Indiana and the New York legislatures pertaining to the defrauding of telephone companies. (See TELEPHONY, Feb. 4, for proposed legislation in Massachusetts.)

The New York bill would make it a misdemeanor for persons, who with intent to avoid payment of charges, obtain or attempt to obtain, telephone service by charging service to an existing telephone number or credit card number, without authority of the subscriber or lawful holder; or to nonexistent or cancelled credit card numbers; or by rearranging, tampering with, or making connection with any facilities of a telephone company.

The Indiana bill would, among other things, outlaw using a code, prearranged scheme, or other devices to transmit information without completing long distance calls.

The bill would also cover the illegal use of someone else's credit card.

Set Hearing on Illinois Sale

The Illinois Commerce Commission on Feb. 21 will consider the application of the Fairview Central Telephone Co. to sell its facilities and property to the Mid Century Telephone Cooperative, Inc., Canton.

USITA Announces Plans for 1961 Management, Engineering Programs

THE United States Independent Telephone Association's Personnel Committee and the Subcommittee on Engineering Education have just announced 1961 plans for their respective educational programs.

The fifth annual Telephone Engineering Conference, sponsored by USITA, will be held June 25 to July 15 at Michigan State University, East Lansing, Mich.

The USITA Management Development Program is scheduled for the four-week period July 16 to Aug. 11, 1961. Enrollments are limited to a total of 48 and the 1961 enrollment closing date is Apr. 1.

Brochures describing the 1961 program were placed in the mails late in January. Those interested who have not received a copy, complete with application forms, will, for a limited time, be able to obtain copies either through the offices of state telephone associations, or by writing directly to Dr. James R. Surface, director, USITA Management Development Program, c/o University of Kansas, School of Business, Lawrence, Kan.

USITA's Personnel Committee reports that alert Independent telephone company managements are recognizing more and more the value of participation in this important program. The committee goes on to observe that while it is difficult to be away or to have a key employe away for a full four-week training period, most of the progress we ever make is the result of doing the difficult; that a very vital part of the work which management has the obligation for doing today involves preparation for the work and developments to be confronted tomorrow.

The USITA Management Development Program is the result of several years of study and development work by USITA's Personnel Committee and by the University of Kansas School of Business. During this study and development period, members of USITA's Personnel Committee visited certain universities throughout the country and were aided materially by counseling with many of our country's experts in the field of management development work.

The program is designed for executives who currently have important administrative responsibilities. Areas of development are grouped under three general headings — "The Functions of Administration," "The American Business Climate" and "Rate Regulation." "The Functions of Administration" portion is, in turn, subdivided to include — "Control and Financial Administration;" "Human Relations in Business;" "Merchandising;" and "Administrative Policy and Planning." The case method of instruction is used throughout much of the program.

Improvements being made in the 1961 program reflect the benefit of more successful methods used in previous years and other improvements suggested by faculty and participants in previous years programs. The program reflects the experience gained from a variety of successful types of executive development programs conducted in the United States and in other countries.

A mock rate case in which every participant takes an important part has proven to be a very popular feature and it will not only be repeated but expanded as a part of the 1961 program.

Faculty for the program is comprised of experts in the areas of their respective responsibilities. Dr. James R. Surface, formerly of the Harvard Business School faculty, now dean of Kansas University School of Business, is director of the program. He has had extensive experience in management development work for telephone companies and others, throughout the United States and Canada.

* * *

As in the four previous years, the main objective of the three-week 1961 Telephone Engineering Conference will be to instruct and aid engineers and technical personnel of all communications companies in obtaining maximum utilization of every construction dollar. Special emphasis will be given to economic concepts, the relationship of earnings to capital requirements, and the necessity for integrated planning between all departments and segments of the telephone industry.

Highlighting this year's conference will be addresses by outstanding men in the communications industry. Subjects to be covered will include:

(1) Toll ticketing equipment, automatic number identification and all-number calling.

(2) Electronic switching equipment and its application to the telephone industry.

(3) "Things To Come"—a report on

the latest developments in the field of communications.

A brochure describing the 1961 conference and application blanks are being mailed to USITA member companies during February. Since the conference will be limited to 60 participants, it is recommended that the applications be submitted at an early date.

For advance registration or information, please contact Professor John U. Jeffries, Electrical Engineering Department, Michigan State University, East Lansing, Mich. Telephone: EDgewood 2-1511, Ext. 2826.

Bell System Introduces Two High School Science Kits

A Bell System program designed to help teach science in the nation's high schools was introduced recently in New York City by the New York (Bell) Telephone Co.

Two science kits, available in New York to high school laboratories, were demonstrated at a presentation in the New York company's 140 West St. auditorium.

One of the science packages is a mechanical wave machine. Invented by Dr. John N. Shive of Bell Telephone Laboratories, the machine is the first to demonstrate visually many aspects of wave behavior.

Since wave behavior is essentially the same in mechanical, electrical, sound, and optical systems, the wave machine is expected to be applicable in high school physics courses.

The second kit, "From Sun to Sound," demonstrates scientific principles and theories involved in developments such as the transistor and solar battery.

Further presentations of these kits will be made by the New York company in the Upstate and Long Island areas.

Based on the program's enthusiastic reception, the Bell System will introduce new packages in the science series at regular intervals.

Name Dyer Assistant Vice President, Illinois Bell

Lloyd E. Dyer has been appointed assistant vice president of Illinois Bell Telephone Co. He has been employe information manager since 1958.

Mr. Dyer's responsibilities now include internal public relations activities, with employe information, public affairs and community relations.

He joined Illinois Bell in 1945 as a student manager in the Chicago traffic department.

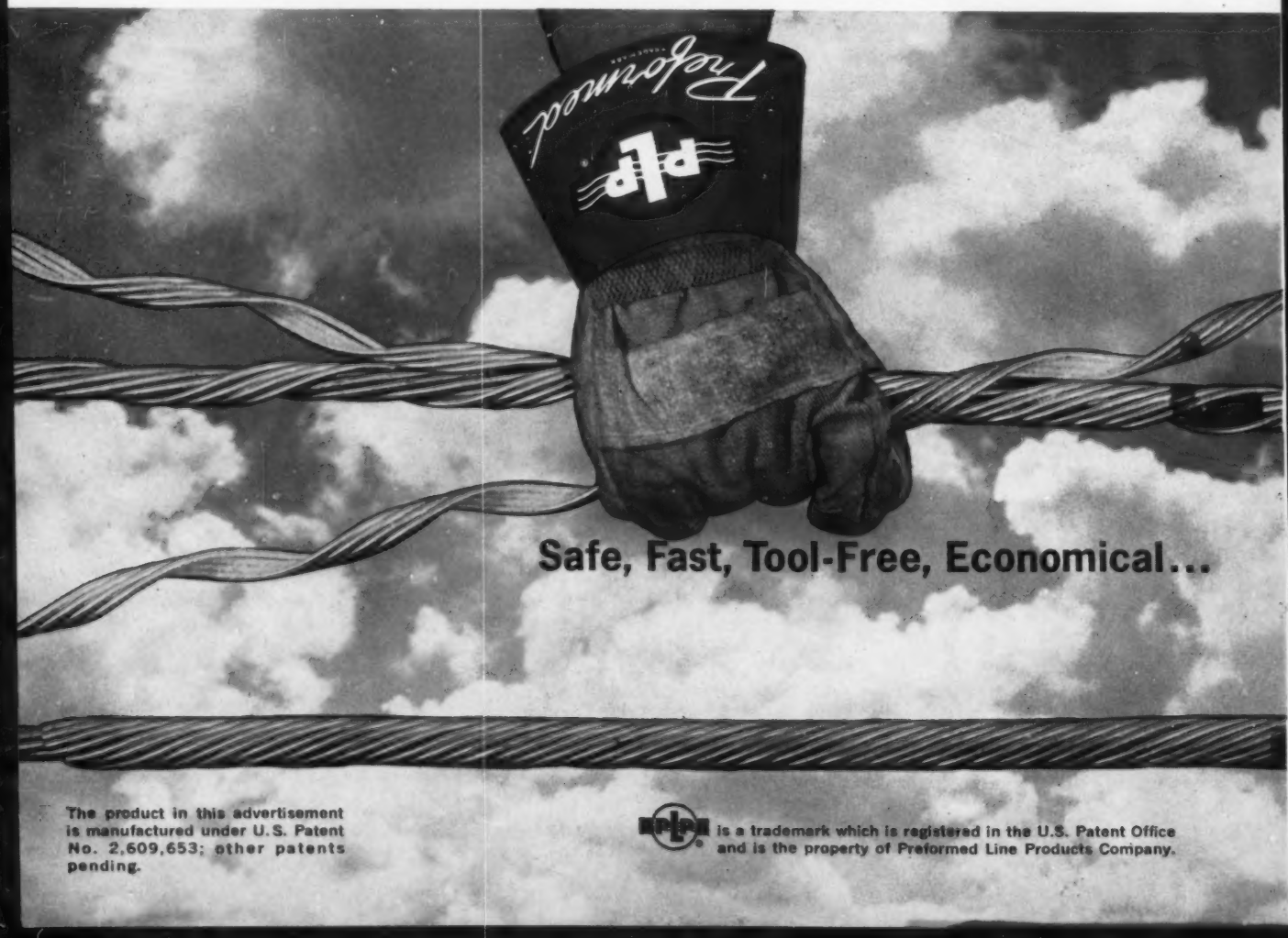
Mr. Dyer is a graduate of DePauw University. During World War II, he served on the Aircraft Carrier Bataan.

Virginians Study Methods Of Service Improvement

The Virginia Independent Telephone Association - Chesapeake & Potomac Telephone Co. Transmission and Communications Improvement Committee on Jan. 18 in Charlottesville held an open meeting to discuss methods of improving telephone service for all the subscribers in the state of Virginia.

Previously the committee had been meeting approximately every two months for similar discussion. Numerous companies had requested permission to sit in on the committee meetings. As a result, the committee decided to have an open meeting and invite representatives from all the companies.

At the meeting in Charlottesville, a "Standing Wave" movie was shown; a talk was given on TWX mechanization; a transmission demonstration was given by the Hallamore Electronics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is a trademark which is registered in the U.S. Patent Office and is the property of Preformed Line Products Company.

Shown above are participants in a meeting sponsored by the Virginia Independent Telephone Association-Chesapeake & Potomac Telephone Co. Transmission and Communications Improvement Committee. They met to discuss methods of improving service for all Virginia telephone subscribers.

Co.; a suggested circuit layout card for use by the Independent companies was explained; a discussion was held concerning centralized reporting of toll troubles and the effect they have had in eliminating re-order and no ring-no answer conditions; and a discussion took place on the causes of noise.

The joint committee consists of staff supervisors from the C&P company—Aldrich Dudley of the executive department, T. A. Keck Jr. and W. R. Carroll, both of the plant department, J. W. Quinlan of the traffic department, and J. B. Spratley of the engineering department.

Representing the Independent companies are J. S. Day, vice president of the Tidewater Telephone Co., Warsaw; John van Liew, equipment engineer of the Virginia Telephone & Telegraph Co., Charlottesville, and Warren B. French Jr., general manager of the Shenandoah Telephone Co., Edinburg.

Wisconsin Convention Set

The Wisconsin State Telephone Association has sets its annual meeting for May 2 and 3, at the Plankinton House Hotel, Milwaukee.

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TRADEMARK
SPLICES for Utility Grade Strands
Used on new construction or repair of existing facilities.
Easily applied and permanent. All applications can be checked visually. Not rigid — flexes with the strand. NO seating of jaws, NO teeth to bite strand. Spinner travels easily over splice WITHOUT lifting or gate adjustment.
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News on New Products

WIDE BOX FOR PICKUP TRUCK— A new wide box for the Studebaker Champ pickup truck has been introduced by Studebaker-Packard Corp.

For 1961, the Champ, Studebaker says, also features a new 110 horsepower six-cylinder overhead valve engine, power matched to the truck's gross vehicle weight, to provide good performance with operating economy. Two V-8 power plants of 180 and 210 horsepower, respectively, are additional engine choices. Other engineering improvements and styling refinements have been made in the new models.

Surrounded by 20-inch high side walls, the new welded box measures 70¾ inches wide, and 49 inches between wheelhouses. Inside lengths of the boxes are 99 inches and 78¾ inches for 122-inch and 112-inch wheelbase models, respectively.

Additional features of the new box are reported to include an extra-wide 54¾-inch sand-tight, grain-tight tailgate; smooth rounded wheelhouses free of sharp edges or corners, and a heavy ribbed floor for long service and easy movement of cases or cartons.

Studebaker Champs are available in half and three-quarter ton models in three gross vehicle weight ratings. Request NP1549.

•

AUTOMATIC APERTURE CARD COPIER— A new automatic aperture card copier — specially designed for large volume production of duplicate "Filmsort" brand aperture cards — has been announced by Microfilm Products, Minnesota Mining & Manufacturing Co. (3M).

Called the "Filmsort" Uniprinter 041, the machine makes "Duplicard" copy cards of original aperture cards at the rate of 2,000 per hour requiring a minimum of manual control and only periodic attention during operation, the company reports.

According to 3M, the new copier fills several needs in the distribution of engineering data for use or reference:

Multiple decks of aperture cards can be produced quickly and inexpensively for initial distribution to any number of locations.

Duplicates of original film can be made for the establishment of files in new areas where point of use reference is desired.

For example, distribution of engineering data for procurement purposes can be speeded by the new unit, the firm said, by supplying contractors with microfilm copies of aperture cards, thus cutting time and expense of providing full or half-sized prints.

This machine cuts the direct labor burden of such technical print preparation substantially since white-printer, additional camera, processing, and printing time are eliminated.

Thus, the firm estimates, the new printer can accomplish in one or two man-hours what would ordinarily take upwards of seven man-hours using regular reproduction methods.

As an example, 50 copies each of 40 different engineering drawings — some 2,000 copies — can be produced in a little over an hour, depending upon the work program.

The machine operates by push button control. The original aperture cards and the blank copy cards are stacked in additional feeders, then fed automatically into a pocket that moves through the exposure chamber. The cards are separated by the machine, with the original being restacked and the copy card moving on through the developing section. After the copy card is developed, it is stacked automatically. Both originals and duplicates

are returned in proper sequence. "Duplicard" copy cards made by the unit emerge ready for immediate use.

The "Uniprinter 041" stands 53 inches high, 29 inches wide and 84 inches long and weighs 1,500 pounds. It uses 220 volts, 20 amps. 60-cycle single phase. The exposure lamp is a 2,200-watt mercury vapor unit.

Price of the machine is $25,000 installed. Request NP1550.

•

CHAIN PRINTER WITH DOUBLED NUMERICAL SPEED — Numerical reports and documents can now be printed at speeds up to 1,285 lines per minute by the IBM 1403 printer. At this rate, a payroll register listing the man number, department number, gross earnings, various deductions, and net pay for each employe in a 20,000-man payroll can be printed by the 1403 in a little over 15 minutes.

TELEPHONY PUBLISHING CORP.
608 S. Dearborn St.
Chicago 5, Ill.

Please have the manufacturer send me without obligation the literature indicated by the following numbers:

NP1549_____; NP1550_____; NP1551_____; NP1552_____;

NP1553_____; NP1554_____; NP1555_____.

Name.....

Company.....

Street.....

Town and State.....

2/18/61

Two new optional features announced by International Business Machines Corp. enable the 1403 to print numbers at more than double its 600-lines-per-minute alphanumeric printing rate.

The first feature—an interchangeable chain cartridge adapter—enables the operator to change quickly from one type-size, type-style, or special character arrangement to another.

IBM says the second feature—numerical print—more than doubles the output potential of the printer when preparing reports, such as transit listings and others which can be limited to numbers only. The adapter is a prerequisite for use of the numerical print feature.

The IBM 1403 printer is the high-speed output printer for IBM's two solid-state 1400 series computers—the 1401 and the larger, more powerful 1410 data processing systems. It prints by means of a swiftly moving chain of engraved type faces that moves across the face of forms or documents at a constant speed of 90 inches per second. Electronically-timed hammers along the printing line press paper and ribbon against a type character, causing it to print. The printer's standard alphameric print chain is composed of five identical character sets of 48 characters each—26 alphabetic, 10 numeric and 12 special characters.

For high-speed numerical printing on a 1403, a numeric chain made up of 15 character sets, each containing 10 numbers and six special characters, is used. IBM states the interchangeable chain cartridge adapter enables the user of a 1403 equipped with the numerical print feature to switch back and forth between alphameric and numeric printing simply by changing the chain cartridge in the printer. Needing no special tools, an operator can quickly remove one chain and replace it with the other. When a new chain cartridge is placed in the 1403, the appropriate mode of numeric or alphameric printing is selected automatically.

In addition to the numeric chain, other print chains will also be available with the interchangeable chain cartridge adapter. These additional replaceable chains can have different arrangements of special characters, distinctive type styles and be either alphameric or numeric. They will allow firms with 1401 and 1410 computers to print reports especially suited to particular commercial, scientific or special work.

Numerical printing with the IBM 1403 is especially designed for use in what the company describes as 1401 and 1410 applications which require no alphabetical printing. In operations such as plant and customer accounting for public utilities, and transit listing, trial balancing, commercial checking and demand deposit accounting for banks, the fast numerical print-out provided by the 1403 can result in significant time savings for 1401 and 1410 users.

The two new features, plus a control making possible 1,285 lines-per-minute printing with the 1403, rent for a total of $350 per month and sell for a total of $14,175.

The interchangeable chain cartridge adapter, including the interchangeable chain cartridge and either a numeric or an additional chain, rents for $75 a month and sells for $3,125. It can be used with either model of the 1403 and will be available for installation in a user's office or at the factory starting in July of this year.

The numerical print feature which can be used with either model of the 1403 rents for $225 a month and sells for $9,050. A control required for use of this feature in 1401 and 1410 systems rents for $50 a month and sells for $2,000.

The numerical print control feature is available for the processing unit of any card, tape, RAMAC, or RAMAC/tape 1401 computer, except for the basic Model A system. For 1410 systems, it can be installed on the Model 3 or 4 of the IBM 1414 input/output synchronizer.

The numeric print feature and its control will be available on a factory-installed basis beginning in October of this year for 1401 systems and starting in June, 1962, for 1410 systems. Request NP1551.

•

COMPACT CALCULATOR—The Type 2 Curta calculator is a lightweight calculating machine introduced by the Curta Co. for designers, engineers and technicians who require a precise "on-the-spot" answer for every type of mathematical operation.

The company states the calculator combines the accuracy, speed and versatility of a large desk calculator with the portability of a pocket slide rule. It has a capacity of 11 digits on the keyboard, 8 digits on the indicator dial and 15 digits (corresponding to 999 trillion) in the answer dial.

Described as precision-made of stainless steel and high-grade anodized aluminum alloys, the cylindrically shaped Curta is only 2 1/16 inches in diameter by 3⅜ inches high (about the size of a fishing reel) and weighs 12 ounces. Easily held and operated in one hand, the calculator is noiseless in operation, rust and corrosion-proof and does not require an external power supply.

The main barrel assembly contains the 11-digit horizontal keyboard with color-coded setting knobs and movable white decimal markers. A number set on the keyboard remains unaltered until a calculation is completed. A driving axle with a step drum and reciprocal cog system passes through the center of the machine and is actuated by a short-radius operating handle designed for high-speed operation. The knurled carriage contains the revolution counter, result dial and additional decimal markers. A single lever will clear the two dials, either simultaneously or individually.

A continuous tens transfer and reversing lever permits short-cut techniques in the basic operations of multiplication, division, addition, subtraction and in multiple operations involving cubes, roots, percentiles and trigonometric functions, Curta states. Automatic stops prevent errors in operation or damage from overspeeding in fast operation.

The Type 2 Curta is supplied in dust and shockproof metal container and is guaranteed for one year. Request NP-1552.

•

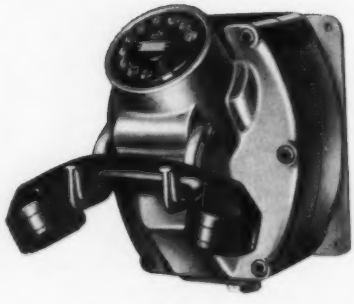
TOOL FOR VARIABLE-ANGLE DRILLING—Glenwood Gyro-Drive, Inc. has introduced its model 101 Gyro-Drive tool adaptable to any electric drill which permits drilling at any angle up to 52 degrees.

The company states this tool facilitates drilling in cramped quarters; also that it works safely and firmly at full-power with no bulky gear-box to install or handle. It measures less than 6 inches overall and weighs approximately 12 ounces.

Gyro-Drive, says the company, fits

(Continued on page 41)

Different people want different phones



HAZARDOUS LOCATION PHONE
Safe service in dangerous atmospheres. For use in oil refineries, gas plants, laboratories, etc. Sealed housing contains explosions, encloses all components that might produce sparks.

AE makes a phone for every customer need

TYPE 86 PHONE
Key telephone provides switchboard convenience for small commercial subscribers. Up to six central office, PBX, or private lines. Dial or pushbutton intercom service. Choice of 10 colors.

Each person in your area has specific telephone needs. Take the man who works in an oil or gas plant. He needs the protection of a hazardous location phone. However, a secretary needs the convenience of a multi-line phone. You can sell both...

To meet the needs of different customers, you must provide many types of phones—standard *and* special. Why? Because it's profitable! The customer who wants a special phone pays extra for the extra service.

Any new customers in your area? Any old ones with new telephone needs? If so, show them the AE phone best suited to their particular needs. Contact your AE representative. He'll be glad to give you full details on our complete line of telephone services and related instruments. Only AE offers 15 different phones to meet different customer needs.

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GENERAL TELEPHONE & ELECTRONICS

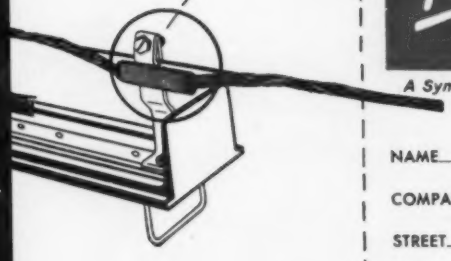
GENERAL SYSTEM

For Multipair Wire...

500 SERIES

ready access wire terminal

- Used with wire-messenger supported Multipair Wire
- Easily installed on existing wire
- Accommodates up to four Catalog No. 105 (6-pair) Terminal Blocks
- Mounts directly on the support wire



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Please send me current literature describing Ready Access Wire Terminals.

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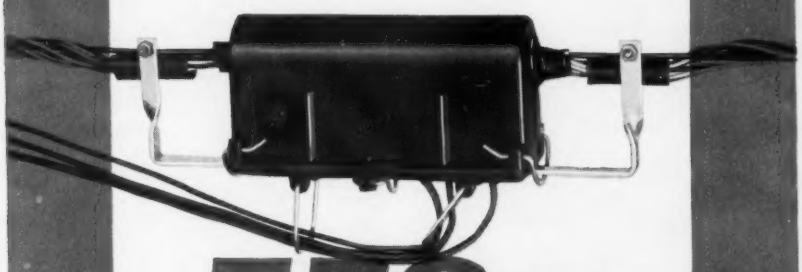
And where you need

a smaller unit . . .



550 SERIES

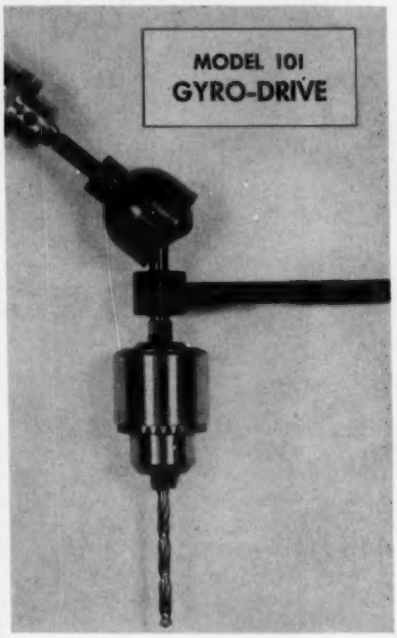
ready access wire terminal

- COMPACT—*Half the length* of the Series 500 terminal *with all the same advantages.*
- Accommodates up to two protected or unprotected Wire Terminal Blocks or loading coils.
- Has an improved mounting bracket.

Fill out and mail coupon for full details.

Reliable

all models of power drills, ¼-inch or ½-inch capacities, and may be permanently installed on the drill by requesting a special adaptor, or by attaching the chuck with an additional chuck added at the operating end.



Gyro-Drive can be mounted directly into any drill spindle with ⅜-inch x 24 male or female thread.

Removable hand grip bar is used when drilling in metal or masonry where extra pressure or control is needed.

Gyro-Drive is furnished with threaded sleeve permitting use of either ¼-inch or ½-inch chuck.

The model 201 Gyro-Drive is available for impact and socket wrenches, ⅜-inch or ½-inch drive; also for multiple drill heads and power take-off of tractors in connection with industrial and other uses where a universal joint is required. Request NP1553.

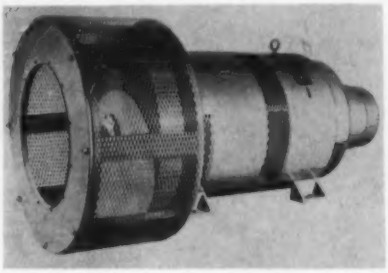
•

MOTOR-GENERATOR—Protecting the continuity of microwave communications by means of "No-Break Power" is a new motor-generator, with a special flywheel arrangement, introduced by Kato Engineering Co. In case of failure of normal electric power, the momentum of the large flywheel is designed to keep fluctuation to a minimum until the standby power plant is cut into the line.

This motor-generator set features a brushless-type generator with direct-connected separate exciter, is rated at 5 KW, 6.25 KVA, .8 factor, 120 volts ac, one phase, 50 cps.

A Kato mag. amp. regulator provides 1½ per cent of rated voltage under

one-fourth load to full-load conditions. The rectifier assembly is mounted on the end of the shaft for easy replacement of rectifiers, the company points out.



The motor is 10 hp, 208/416 volts ac, 1,500 rpm, 50 cycles, 3-phase, wound-rotor induction type. Request NP1554.

•

"RAY GUN" COMMUNICATION SYSTEM—A new communication system that uses "ray guns" to transmit voices secretly and silently by means of invisible infrared beams has been announced by the Aeronautical Division of Minneapolis-Honeywell Regulator Co.

The system makes use of sending and receiving units shaped like guns. They are aimed at each other for the transmission of a narrow beam of infrared radiation. Words spoken into the gun are electronically converted into infrared beams, the company reports, and transmitted to the receiver, which converts the message back into sound.

Honeywell engineers said small hand-held units can be used for communication between points up to 3 miles apart, and that there are larger systems that have a range of up to 20 miles.

The system, called MAXSECOM (Maximum Security Communications), is described as immune to interference, detection or jamming. It was developed for military, police and civil defense applications requiring secrecy and immunity to interception or jamming, and for a variety of industrial applications.

Honeywell pointed out that since the system requires no wires or cables between transmitting and receiving units, it can be put into operation quickly as a temporary communication system. Also termed advantageous is the fact it uses a portion of the electromagnetic spectrum that is considerably less crowded and, therefore, less subject to public control than radio channels.

The infrared signal of MAXSECOM is confined by optical control to a narrow beam between sender and receiver. The signal can be received only in this zone, and then only by another Honeywell MAXSECOM unit containing the necessary specialized infrared sensor optics and decoding device.

The optical assembly for MAXSECOM, Honeywell says, consists of a lamp housing, condensing lens system, germanium semi-conductor modulator crystal, lead, sulfide detector and collecting optics. Weight of the entire transceiver unit is under 10 pounds.

The company describes the working of the system as follows: Infrared radiation is emitted by a tungsten filament lamp, collected by the condensing lens system and focused onto the face of the semi-conductor modulator. Voice signals picked up by a microphone are amplified and impressed on the modulator.

Electrical modulation of the crystal results in an optical modulation of the incident infrared radiation as it passes through the crystal. The outgoing infrared radiation is collected on the lens and refracted into a narrow cone of radiation.

At the receiving end, a MAXSECOM unit collects the modulated infrared radiation and focuses it onto the detector cell. The signal then is amplified by means of the same electrical circuits used for transmission, and the signals are sent into the speaker. Request NP1555.

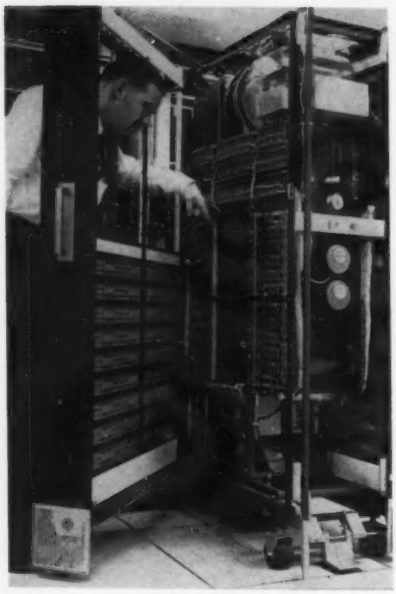
PA. BELL DATA PROCESSING

Concluded from page 26

greater detail on toll calls. In addition, by-products will include items such as traffic studies and an analysis of marketing data.

Planning and programming for the inauguration of electronic data processing at Conshohocken took a year and a half, during which 40 specialists from various Bell System companies worked together developing the necessary 100,000 computer instructions. Meanwhile, training classes were in operation for other Bell personnel at Conshohocken, to prepare them for the job of programming and running the big computers.

Some jobs other than billing and collecting are envisioned for the computer system, once it has passed the test of a "shake-down" run. Among the many applications under study are payroll processing, property and cost accounting, planning construction programs, and compiling personnel statistics.



Computer's brain is on a roll-out panel. Shown inspecting it, is Paul Kelly, senior staff assistant, at Bell of Pennsylvania's Conshohocken EDP center.

The data processing center could ultimately handle materials distribution problems, operations research and the testing of mathematical or symbolic models of Bell System facilities and operations, it is said.

This step by Bell of Pennsylvania in applying electronic data processing to the telephone industry promises a degree of mechanization for the business side of the industry comparable in speed and efficiency to that already achieved on the communications side, a spokesman for Bell of Pennsylvania stated.

Belief in Free Agents

". . . For our prosperity and well-being, much credit is to be given to the fact that our forefathers established this nation on the belief that man is a free agent, responsible for his acts and for his relationship with others; that he is capable of improving his own condition through faith, self-reliance and individual initiative. Had America been established on the false notion that the individual should look to someone else to run his life and provide for him, it is quite certain that today we would be neither free nor prosperous.—*Wildwood (N. J.) Leader.*

Still typing toll-call details on bills?

Here's how you can trim typing costs *now!*

Even a small telephone company—with as few as 500 subscribers—can cut toll call *billing costs in half* . . . or handle *twice the business* without extra billing help, by using a RECORDAK Microfilmer! You simply substitute an easy picture-taking routine for wasteful descriptive posting.

Here's how it's done: just enter the total of all toll charges (plus tax) on bill . . . microfilm it and the toll tickets . . . and send to subscriber. That's it in a nutshell!

Other advantages: Reference is easy. You keep a photo-exact record which you can check in seconds with a RECORDAK Film Reader. Your subscribers have all the details. Getting the toll tickets with the bill answers their questions about forgotten calls.

The trim RECORDAK Portable Microfilmer is just right for small companies. Microfilms up to 90 tickets a minute and returns them in sequence . . . up to 14 items on a penny's worth of film. High-speed units available for large-volume operations. Mail coupon today for further details.

RECORDAK®

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originator of modern microfilming

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415 Madison Avenue, New York 17, N.Y.

Please furnish free case histories on RECORDAK Toll Billing System. Also details on the new RECORDAK Portable Microfilmer.

Name_____ Position_____

Company_____

Street_____

City_____ State_____

Members of the General Telephone Directory Co's management staff who participated in Jan. 16-20 Las Vegas, Nev., conference.

Left to right, front row: R. T. Beard, vice president-sales; Dean Porter, general publishing manager, and W. E. Cathers, National Yellow Pages Service manager, all of Des Plaines, Ill.; Don Briggs, division manager, San Angelo, Tex.; Lester J. Barton, division manager, Muskegon, Mich.; Lew Beeler, sales supervisor, Ft. Wayne, Ind. Division; Dave Simpson, division manager, Ft. Wayne, Ind.; Jack T. Ward, division manager, Bloomington, Ill.; Ray Hatfield, division manager, Lexington, Ky.; O. R. Stigall, eastern regional manager, Ft. Wayne, Ind.; O. D. Swanson, vice president-production, Des Plaines; and Paul Rossiter, division manager, Long Beach, Cal.

Back row, left to right: Cal Breeding, division manager, Honolulu, Hawaii; Harry Stevens, vice president and sales manager, Dominion Directory Co., Ltd., Vancouver, B. C.; E. T. Jordan, western regional manager, Long Beach, Cal.; H. Duncan Price, director of public relations and advertising; W. H. Loomis, president; and Paul Gadbois, director of sales training, of Des Plaines. Max Gudowski, division manager, Columbia, Mo.; John O'Neil, secretary and controller; and Don Powers, chief accountant, of Des Plaines; Owen Stayner, division manager, Erie, Pa.; L. A. Buckland, division manager, Madison, Wis.; Warren Rolph, vice president, Downey, Cal.; Ed Fillipow, assistant division manager, Long Beach, Cal.; R. K. Hickman, assistant division manager, San Angelo, Tex.; Orville Spradling, sales supervisor, San Angelo, Tex. Division; Fred Dorr, sales supervisor, Durham, N. C., Division; Allan Anderson, division manager, San Francisco, Cal.; A. S. Vince, president, Dominion Directory Co., Ltd., Vancouver, B. C.; Ted Mertens, division manager, Spokane, Wash.; John Quint, sales supervisor, Long Beach, Cal. Division; Paul Schewe, division manager, Durham, N. C.; and Harold Davies, assistant sales manager, Dominion Directory Co., Ltd., Vancouver, B. C.

General Telephone Directory Has Annual Management Meet

General Telephone Directory Co.'s annual management conference, held in Las Vegas, Nev. on Jan. 16, 17, 18, 19, and 20, was attended by management personnel from the company's Des Plaines office, from the two regional offices, and from the 13 division offices. Also in attendance were personnel from General's affiliated company, the Dominion Directory Co. of Vancouver, B. C.

Wesley Loomis, president, reviewed the accomplishments of 1960, and discussed the challenges of the future.

During the conference, the division managers presented their proposed plans of operations for 1961.

Roland T. Beard, vice president-sales, stressed the importance of following the basic fundamentals of good salesmanship, and explained the intensified training and re-training program now under way.

New methods, procedures and techniques currently in practice and forthcoming, which mean greater efficiency to the company, were reviewed by O. D. Swanson, vice president-production.

The 1960 advertising and promotion program was presented by H. Duncan Price Jr., director of public relations and advertising.

Among guest speakers who addressed the conference were: Don G. Mitchell, president of General Telephone & Electronics Corp.; F. A. Dresslar Sr., president of the Southern Nevada Telephone Co. of Las Vegas; Dr. Robert M. Wald, vice president of George Fry & Associates of Los Angeles; Richard L. Bradley, manager, personnel division of Lester B. Knight & Associates, Chicago; R. T. King, administrator of directory operations for American Telephone & Telegraph Co., and Ed Hancharik, Yellow Pages supervisor, also of AT&T.

To Confer Washington Award On Kahler of Illinois Bell

William V. Kahler, president of Illinois Bell Telephone Co., will receive the 1961 Washington Award—one of the nation's outstanding honors for engineers.

Mr. Kahler's selection was announced on Feb. 14 by the Washington Award Commission, representing the American Society of Civil Engineers, American Institute of Electrical Engineers, American Institute of Mining, Metallurgical and Petroleum Engineers, American Society of Mechanical Engineers and Western Society of Engineers. Western Society administers the award.

The award commission stated it chose Mr. Kahler "for distinguished leadership in business and civic affairs and for exceptional service to education and humanity."

The award will be presented at the Washington Award banquet on Mar. 2, by Raymond D. Maxson, president of the Western Society.

Mr. Kahler, who started his telephone career in 1922 as an engineering assistant with Bell Telephone Laboratories in New York, has been with Illinois Bell since 1924. He was named president in 1951.

The Washington Award was established in 1916 by the late John Watson Alvord, partner in Alvord, Burdick & Howson, engineers, and Western Society past president. It is named for George Washington, first U. S. President, and is conferred upon "an engi-

neer whose professional attainments have pre-eminently advanced the welfare of mankind."

IN THE NATION'S CAPITAL

Continued from page 23

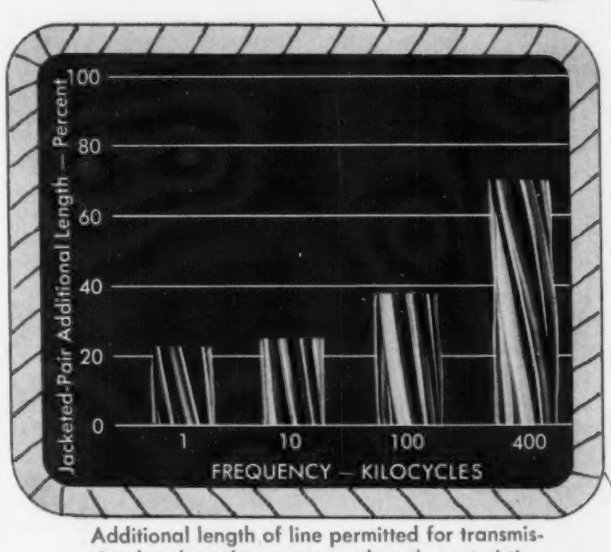
Although his own background does not embrace actual experience in this regulatory area, Mr. Minow's testimony showed that he has been doing his homework and has taken in quite a bit of information and legal knowledge about the work of the FCC since his appointment a month ago.

Minow drew a nice distinction, for example, between the FCC engaging in censorship—which is forbidden by the Communications Act — and enforcing disciplinary standards of public interest—which *is* clearly within the FCC's authority. "We must never engage in censorship or limit free speech," he said, but if a TV or radio station "does not operate responsibly," the FCC can move into the picture and perhaps refuse to renew the license. Using the much criticized Westerns as an example, Minow said: "If a station puts on a poor Western, that's none of the government's business," but "if all they put on is Westerns, then the FCC should be concerned" about whether the station is fulfilling its public responsibility. "The airways belong to the people, and they have the right to see that they are being used properly," he stated.

Senator McGee (Dem.), who hails from Wyoming, put in a mild word for the open range sagas, when Chairman Magnuson (D., Wash.) proposed that broadcasters should be required to label fiction as fiction and stick to the facts if a program proposes to be historical. This, said Senator McGee, would "spoil it," pointing out that Wyoming does a booming business in tourists who come to see if the people out there in the West really ride around on horses, wearing cowboy chaps, broadbrim hats, and all the rest. McGee felt that there is a certain "folklore" quality to Western programs which should be preserved for itself, along lines something like Santa Claus.

It is strange, indeed, that a period of our national history of no longer than three decades and more likely only two decades (1870 to 1890) should have produced the phenomena of a purely regional activity which continues to exert such fascination for so many adults as well as juvenile Americans and Europeans as well. The era of the "cowboy," when law-abiding citizens had to take the law into their own hands to put a stop to local banditry, occurred in the western territories fol-

now you can have
LONGER
LINES
with WB
JACKETED-PAIR
DISTRIBUTION WIRE



Additional length of line permitted for transmission loss based on wet weather characteristics. Jacketed-Pair vs Standard Construction (PE-15 March 1960)

Jacketed-pair Distribution Wire exhibits substantially lower loss during heavy rain and will, therefore, allow a longer line for an equal transmission loss. At one kilocycle this improvement permits a 22% longer line.

Write for full details shown in our new Bulletin T-6.

WB WHITNEY BLAKE CO.

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lowing the end of the Civil War up until the opening of the transcontinental railroads began to bring law and order to even the most remote communities.

Yet, the preoccupation of modern novelists and script writers for this brief passing period far surpasses any parallel historical activity, such as the four centuries of the age of chivalry or nearly a millenium during which the rise and fall of the Roman Empire occurred. If a nose count could be made there are, today, probably more phony extras and bit actors engaged in the production of Westerns than there were ever real live cowboys in the storied days out West when men were men and everybody carried his own shooting irons; as well as far more grease paint Indians than real Indians now alive.

Speaking of nose counting, the use of so-called program rating services was said by the senators to be another "proper area of concern," for the FCC. These are the services which survey samples of viewing audiences to establish various ratings for programs. Senator Monroney (D., Okla.) said these samples are too small and the industry relies too heavily on them in scheduling programs. Chairman-to-be Minow replied: "My own feeling is that they underestimate the taste level of the public." He added: "I intend to look into them."

He also intends to step up the FCC new TV program-policing efforts. This was put into effect last summer under former Chairman Ford when the FCC started monitoring TV and radio programs to check on their content.

One thing is certain, if the senators follow this "truth and fiction labeling" too far, they might reach the point where some of our politicians will have very little to say. And some of those beautiful actresses will have to walk around between sandwich boards while Bing Crosby figures out what to do about his toupee and Frank Sinatra considers his shoulder pad situation.

Congressional Committees of Interest to Industry

Senate Committee on Interstate and Foreign Commerce: Magnuson (D., Wash.), chairman; Pastore (D., R. I.), Monroney (D., Okla.), Smathers (D., Fla.), Thurmond (D., S. C.), Lausche (D., Ohio), Yarborough (D., Tex.), Engle (D., Cal.), Bartlett (D., Alaska), Hartke (D., Ind.), McGee (D., Wyo.), Schoeppel (R., Kan.), Butler (R., Md.), Cotton (R., N. H.), Case (R., N. J.), Morton (R., Ky.), and Scott (R., Pa.).

Senate Committee on Post Office and Civil Service: Johnston (D., S. C.), chairman; Monroney (D., Okla.), Yarborough (D., Tex.), Clark (D., Pa.), Jordan (D., N. C.), Randolph (D., W. Va.), Carlson (R., Kan.), Fong (R., Hawaii), and Boggs (R., Del.).

Senate Committee on Finance: Byrd (D., Va.), chairman; Kerr (D., Okla.), Long (D., La.), Smathers (D., Fla.), Anderson (D., N. M.), Douglas (D., Ill.), Gore (D., Tenn.), Talmadge (D., Ga.), McCarthy (D., Minn.), Hartke (D., Ind.), Fulbright (D., Ark.), Williams (R., Del.), Carlson (R., Kan.), Bennett (R., Utah), Butler (R., Md.), Curtis (R., Neb.), and Morton (R., Ky.).

House Committee on Interstate and Foreign Commerce: *Democrats:* Harris (Ark.) chairman; Williams (Miss.), Mack (Ill.), Roberts (Ala.), Moulder (Mo.), Staggers (W. Va.), Rogers (Tex.), Friedel (Md.), Flynt (Ga.), Macdonald (Mass.), Rhodes (Pa.), Jarman (Okla.), O'Brien (N. Y.), Moss (Cal.), Dingell (Mich.), Kilgore (Tex.), Rogers (Fla.), Hemphill (S. C.), Rostenkowski (Ill.), and Healey (N. Y.). *Republicans:* Bennett (Mich.), Springer (Ill.), Schenck (Ohio), Derounian (N. Y.), Younger (Cal.), Avery (Kan.), Collier (Ill.), Glenn (N. J.), Devine (Ohio), Nelsen (Minn.), Keith (Wis.), and Curtin (Pa.).

House Committee on Post Office and Civil Service: *Democrats:* Murray (Tenn.), chairman; Morrison (La.), Davis (Ga.), Lesinski (Mich.), Granahan (Pa.), Dulski (N. Y.), Alford (Ark.), Henderson (N. C.), Olsen (Mont.), Addabbo (N. Y.), Ichord (Mo.), and Peterson (Utah). *Republicans:* Corbett (Pa.), Gross (Iowa), Broyhill (Va.), Johansen (Mich.), Cunningham (Neb.), Wallhauser (N. J.), Barry (N. Y.), and St. George (N. Y.).

House Committee on Ways and Means: *Democrats:* Mills (Ark.), chairman; King (Cal.), O'Brien (Ill.), Boggs (La.), Keogh (N. Y.), Harrison (Va.), Karsten (Mo.), Herlong (Fla.), Ikard (Tex.), Machrowicz (Mich.), Frazier (Tenn.), Green (Pa.), Watts (Ky.), Ullman (Ore.), and Burke (Mass.). *Republicans:* Mason (Ill.), Byrnes (Wis.), Baker (Tenn.), Curtis (Mo.), Knox (Mich.), Utt (Cal.), Betts (Ohio), Alger (Tex.), and Mumma (Pa.).

Justice Triumphs

"Foolish men imagine that because judgment for an evil thing is delayed, there is no justice, but an accident alone, here below. Judgment for an evil thing is many times delayed, sometimes a day or two, sometimes a century or two; but it is sure as life, it is sure as death."—CARLYLE.

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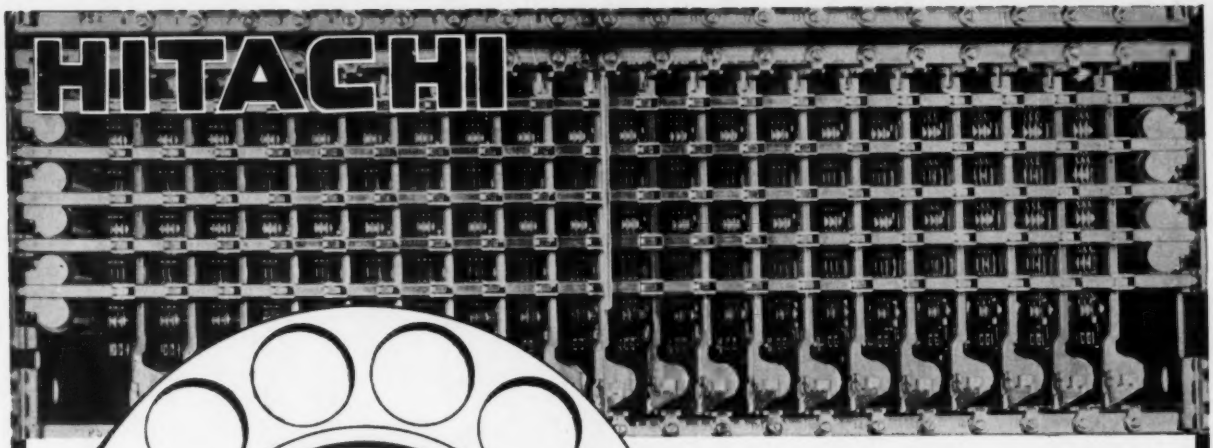

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Extensive Hitachi experience with communications systems is reflected in the handsome Type HA-6 telephone set. Its light, compact and sturdy body is tough enough to withstand the shock of being accidentally dropped to the floor. Other outstanding features include high-fidelity transmission and reception, dust-proofed ratchet for ever-smooth dialling action, and clear and commanding bell-tone.

Today's telephone communications authorities are now employing the Crossbar System Automatic Telephone Switchboards in addition to the time-proven "step-by-step" Strowger System. They are finding that the Crossbar System offers many advanced facilities, fewer maintenance problems, minimized failures and longer service life, and that these features are making it ideal for unattended operations. Hitachi has devoted particular attention to the development of the Crossbar System, and consignees continue to report gratifying operating results.

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Tokyo Japan

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More than 60 years of service in every phase of telephone operations and construction back up Gustav Hirsch Organization, Inc., in the following special services:

— Appraisals of communication system properties
— Representation of telephone utilities in rate matters
— Preparation of depreciation and plant replacement schedules
— Years-ahead master planning of telephone service
— Preparation of Pro-Forma operating statements to aid in financing expansion and rehabilitation programs

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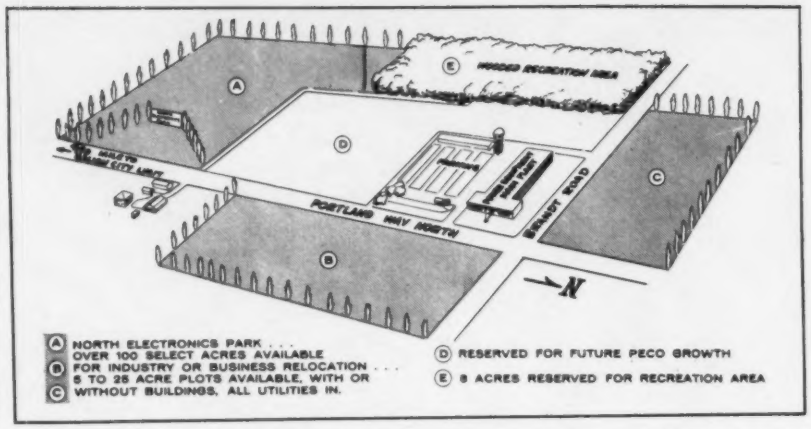
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B 5 TO 25 ACRE PLOTS AVAILABLE, WITH OR
C WITHOUT BUILDINGS, ALL UTILITIES IN.
D RESERVED FOR FUTURE PECO GROWTH
E 8 ACRES RESERVED FOR RECREATION AREA

Layout of projected North Electric Co. "Electronics Park," a 100-acre industrial development site near Galion, O.

Launch Electronics Park; North Development Venture

North Electric Co., Galion, O., launched a far-reaching plan to spur the industrial and economic growth of its home city recently, when it revealed the establishment of "North Electronics Park"—a new 100-acre industrial development site located on property adjacent to Power Equipment Co., North subsidiary at the edge of the city.

Commenting on this newest phase in the company's community-industrial relations, William Tucker, North president stated:

"North Electronics Park opens wide the doors of opportunity to far-seeing manufacturers who will view Galion as we do, an environment of sincere and conscientious people; an area with bountiful natural and human resources; and, most of all, a society to which one is proud to belong. Manufacturers and businesses will discover in this receptive industrial climate an assured skilled and cooperative labor supply, ample utilities, and, of high importance, nearness to America's rich Midwest markets.

"We are interested in attracting to this area growing companies in today's rapidly expanding technical, scientific and similarly specialized fields, and thus, creating and utilizing a larger body of highly skilled people.

"To attract such industries, a location must be provided completely free from vibrations and earth shocks, such as those usually present in the vicinity of railroads and heavy steel fabricating plants utilizing presses, hammers, and such equipment. We believe the area offered to be perfect in this respect. North Electronics Park is ideal for intricate electronic, instrumentation and communications facilities."

The site is .4 of a mile from the Galion city limits and is supplied by all utilities. Five to 25-acre plots will be available for sale or lease, with or without buildings. An impressive and colorful 44-x-16-foot-high billboard has just been completed to identify the park.

An integral part of North Electronics Park is the adjoining 8-acre wooded recreation area, which will be shared with participating concerns. It is liberally dotted with picnic tables, fireplaces for cookouts, and rustic benches. Playground equipment will be available, with many trees providing cooling shade for outings in even the hottest weather. Horseshoe courts are available for the more ambitious picnickers, and even cookouts under lights are practical, since the area is wired for lighting. Plans for a family swimming pool to be installed early next year are in the final stages. Trap shooting and other recreational facilities are also planned.

Manufacturers interested in further details concerning the North Electronics Park may write William Tucker, North Electric Co., Galion, O.

Stromberg Names H. B. Miller For Electroacoustics Lab

The appointment of Harry B. Miller as manager of the newly formed Electroacoustics Advanced Development Laboratory in the Military Products Division of General Dynamics/Electronics has been announced by David Y. Keim, director of engineering.

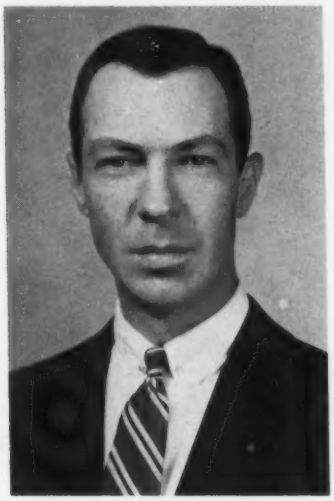
Mr. Miller went to General Dynamics from the Clevite Research Center, Cleveland, O., where for several years, he was manager of the acoustics engineering department. In that position, he developed a number of new products in the fields of air acoustics, underwater acoustics, and magnetic recording.

A native of Boston, Mass., Mr. Miller holds a bachelor's degree in chemistry from Harvard University, and a master's degree in physics from Case Institute of Technology.

He is a member of the Acoustical Society of America.

McDuffie Is Chicago Sales Head for Koppers Division

William N. McDuffie, assistant to the sales manager of the wood preserving division of Koppers Co., Inc., has been promoted to Chicago district sales manager, C. F. Seyer, manager of the Chicago District, announced recently.



W. N. McDUFFIE

In his new position, Mr. McDuffie will assume responsibility for division sales in the 12 mid-western states which make up the Chicago district.

Mr. McDuffie joined Koppers in 1948 as training administrator with the industrial relations department of the wood preserving division. Three years later he was transferred to Memphis, Tenn., as division sales representative. In 1953 he became area sales manager in Kansas City, where he remained until assuming his present position in 1956.

During World War II, Mr. McDuffie served as a fighter pilot in the Army Air Corps for three years. After his discharge he attended the University of Texas where he received a bachelor's degree in business administration in 1948.

Schroeder Heads Nixon Engineering, Name Officers

Harold H. Schroeder has been named as president and treasurer of Nixon Engineering Co., Inc., Omaha, Neb.

Also named as officers of the newly-incorporated engineering firm were W. H. Nixon, vice president, and Clark A. Hollister, secretary.

Mr. Schroeder received his bachelor of science degree in electrical engineering from the University of Nebraska college of engineering. He joined Nixon Engineering in 1951, and at the time of his current appointment, was

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serving the company as general manager. He is a member of the American Institute of Electrical Engineers, the National Society of Professional Engineers, the Nebraska Society of Professional Engineers and the Engineers Club of Omaha.

Mr. Nixon attended the University of Omaha and has been associated with the Nixon company since 1937. He is the son of the late H. S. Nixon, who founded the company in 1919.

Mr. Hollister has served as general superintendent and chief resident engineer. He is a native of Linton, N. D., and joined Nixon Engineering in 1949.

Drs. Bowie, Bartels of GT&E Receive New Assignments

Dr. Robert M. Bowie, vice president of General Telephone & Electronics Laboratories, Inc., and general manager of that organization's Bayside, N. Y., Laboratories, has been assigned to the New York headquarters staff of GT&E Laboratories, it was announced on Jan. 24 by Dr. Herbert Trotter Jr., president of the Laboratories.

In succeeding Dr. Bowie, Dr. Bernhard E. Bartels has been elected a vice president, and appointed director of research for the Bayside laboratories.

DR. R. M. BOWIE

Born in Table Rock, Neb., Dr. Bowie was graduated from Iowa State College, where he received a B.S. degree in chemistry, and M.S. and Ph.D. degrees in physics.

He is a veteran in the field of electronics. In 1933, he joined the engineering staff of Hygrade Sylvania Corp., a predecessor company of Sylvania Electric Products Inc., which is a subsidiary of General Telephone & Electronics Corp. He helped establish a research laboratory at Sylvania, and did pioneering work on television tube research. Dr. Bowie was also responsible for the formation of the Physics Laboratory at Sylvania's Bayside Laboratories, now a part of General Telephone & Electronics Laboratories Inc.

Since then, he has held a number of positions at Bayside, including that of manager, director of engineering, director of research, and vice president.

According to GT&E, significant contributions to vacuum tube and television research have been made by Dr. Bowie, who was chairman of Panel 19 of the National Television Systems Committee; and is chairman of a panel on "Analysis and Theory of the Television Allocations Study Organization."

DR. B. E. BARTELS

Last year, he was appointed by the governor of New York to serve on the advisory council for the Advancement of Scientific Research and Development in New York state. He is also on the advisory committee of the Long Island Graduate Studies and Research Center of the Polytechnic Institute of Brooklyn, Brooklyn, N. Y.

Dr. Bowie is a member of Pi Mu Epsilon, Phi Lambda Upsilon, Phi Kappa Phi, Sigma Xi, and Alpha Chi Sigma. He is a Fellow of the Institute of Radio Engineers, and of the American Physical Society, and in 1960 was chairman of its division of electron physics.

He has been granted 22 U. S. patents, chiefly in the fields of television, thermionics, and microwaves, and is the author of some 40 technical and managerial articles.

Dr. Bartels joined the General Telephone & Electronics Laboratories in 1953 as an engineering specialist. Since

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and have 167% more beam candle power at the same time plus longer bulb life
The efficiency of LIGHT-STICK'S 6-volt circuit does it. Four standard batteries working together give 150% more burning time than the standard 2-cell light.
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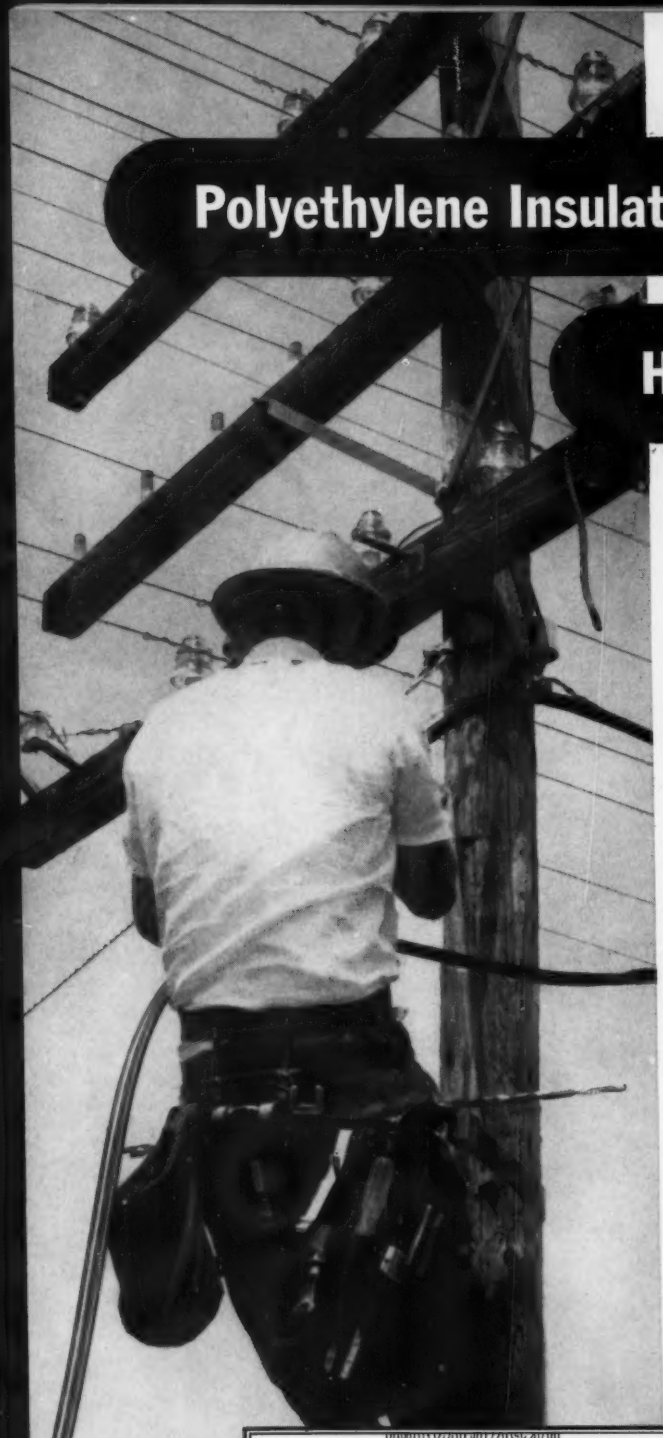


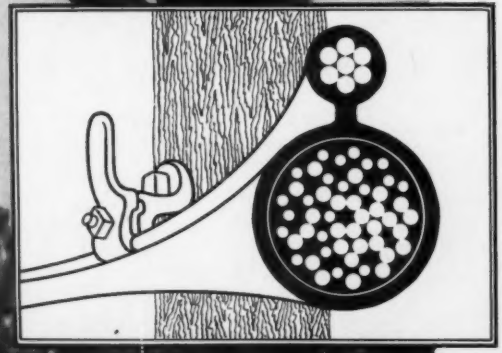
Polyethylene Insulated-Jacketed Telephone Cable

HELPS CUT SYSTEM LOSSES

With the incorporation of nation-wide direct distance dialing, automatic exchanges and subsequently higher traffic loads, telephone companies are placing greater dependence on telephone system components to reduce system net loss. To provide this reliability of transmission and performance, General Cable Corporation has developed a new line of telephone cables, called "Qualpeth," insulated and jacketed with BAKELITE polyethylene. "Qualpeth" cable is designed to minimize cable unbalances which contribute to system losses.

BAKELITE polyethylene, notable for top quality and long service life in the communications field, continues to meet modern telephony's highest standards for insulation and jacketing. As a primary dielectric, it exhibits outstanding low-loss characteristics, maintained over a wide frequency and temperature range. Easy to identify colors stay permanent . . . making installers' tasks easier. Exceptional weather resistance of BAKELITE polyethylene for jacketing assures long-time retention of electrical and essential physical properties, such as toughness and chemical resistance. This material extrudes uniformly, producing a smooth jacket for ease of pulling.

These are but a few of the reasons why top cable producers specify BAKELITE polyethylene for use in highest-quality telephone cables in aerial, duct, above-ground or buried installations. For detailed information, write to Dept. KC-139B, Union Carbide Plastics Company, Division of Union Carbide Corporation, 270 Park Avenue, New York 17, N. Y. *In Canada:* Union Carbide Canada Limited, Toronto 12.



General Cable Corporation approves and uses BAKELITE polyethylene as insulation and jacketing for its new line of "Qualpeth" telephone cables. The Figure 8 type combines the cable and messenger in a single jacket of polyethylene, eliminating spinning operations. Lineman just clamps this construction to the pole. The exceptional toughness of BAKELITE polyethylene is required in the web of the jacket which must support weight of the cable.

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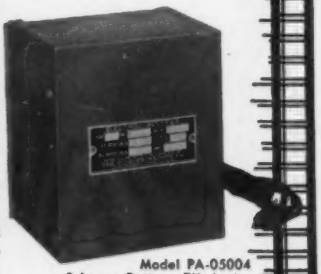

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Here's a sure SCHAUER power source for the operator's circuit on magneto switchboards

Schauer Type PA-05004 Battery Eliminator delivers constant, hum-free direct current to the operator's circuit. Equipped with relay for automatically transferring power to stand-by dry cells in the event of AC failure. Standard capacity is 4 volts DC at 0.5 amps. Steel case, for wall mounting is 5½"x6¼"x4".

Rectifier Division
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that time, he has participated in research on electroluminescent lighting, electroluminescent display devices, and microwave ferrites, as well as on index color picture tubes, and area rectifiers based on semiconductive ceramics. In 1958, he was appointed manager of the chemistry laboratory at Bayside.

He began his professional career in Leipzig, Germany, as a university research assistant, and received his Ph.D. degree in physical chemistry in 1937 from the University of Leipzig.

From 1934 to 1945, he was a member, and later on, a manager of the research laboratories of the Telefunken Co. in Berlin, where he was successively head of the laboratories' picture tube, special video pickup and imaging tube, and semiconductor sections.

From 1946 to 1952, Dr. Bartels headed the electronics laboratory of the Observatoire de Paris, France. While there, he supervised the development of the French version of the vidicon television pickup tube ("conductron") for the visible and infrared spectrum, and performed research on light amplifiers and infrared detectors. He has published papers in the fields of cathode ray tube screens, "flying spot" TV pickup tubes, infrared cells, and vidicon tubes.

He is a member of the American Physical Society.

ITT Underwrites Med. Course In Behalf of Cuban Company

A $40,000 check to underwrite a three-month postgradute training course for about 300 Cuban physicians in exile in the Miami area has been presented by International Telephone & Telegraph Corp. to the University of Miami School of Medicine.

The presentation was made by Dr. D. John Lauer, medical director of ITT, in behalf of the Cuban Telephone Co., an ITT subsidiary taken over in 1960 by the Castro government.

Dr. Lauer, representing Harold S. Geneen, president of ITT, said, "For many years ITT operated the Cuban Telephone Co. as a Cuban enterprise, manned and managed by Cubans. Thus, the company feels a warm relationship with the people of Cuba. We feel that the graduate course offered here by the University of Miami, for our colleagues from Cuba, is one of the best ways we can show our affection and faith in the belief that the present ill winds that blow to the south of us will pass away, and that the Cuban physicians who are with us now can, and will, return to their honored positions and practices and to their people."

The ITT money will help the Cuban refugee physicians to round out their training to qualify to practice medicine in the United States. They will thereby stay proficient during their exile and return to Cuba with their professional skills intact.

Among the 300 Cuban doctors in Miami are 22 full professors from the schools of Medicine of the University of Havana, several of whom have attained international recognition in their areas of medicine. Each has been given a visiting professorship in his specialty by the University of Miami School of Medicine.

The University and the Cuban medical professors have formulated an intensive postgraduate course covering all clinical branches of medicine and the basic sciences, particularly pertinent to clinical medicine, and studies of the English language.

T. B. Collins Is Lenkurt Product Engineering Manager

Tate B. Collins Jr. has been appointed product engineering manager in the commercial marketing department of Lenkurt Electric Co., Inc.

T. B. COLLINS JR.

Mr. Collins is responsible for technical liaison between marketing and development engineering. His organization also produces customer equipment drawings and instructional materials, and conducts customer training.

He formerly was director of carrier and radio sales for Automatic Electric Sales Corp., Chicago, Ill., which until Jan. 1, was Lenkurt Electric's distributor. When Lenkurt assumed its product distribution in those fields, most of Automatic Electric's carrier and radio sales staff, including Mr. Collins, transferred to Lenkurt.

Mr. Collins succeeds Marion C. Royalty, who has been named southwestern district sales manager, with offices in Dallas.

Before joining Automatic Electric in 1952, Mr. Collins was with Southern Bell Telephone & Telegraph Co. for two years as a toll testboard man, and for six years as outside plant, transmission and equipment engineer, which included engineering of central office and carrier equipment.

During four years of service in World War II, he held positions as a staff officer at the U. S. Army Signal Corps school and as battalion commander in the European Theater.

He received his B.S.E.E. and M.S.E.E. degrees from Kansas State College, and is an associate member of the American Institute of Electrical Engineers.

Twin Coach Appoints Leonard As General Sales Manager

Named as general sales manager of the Twin Coach Co. is George R. Leonard, according to announcement by G. R. Hecht, vice president - contracts administration.

Mr. Leonard has held sales, engineering and administrative positions with such companies as Phillips Petroleum Co., and General Electric Co., and most recently was manager of aircraft sales for the manufacturing division of Dresser Industries, Inc.

G. R. LEONARD

His primary responsibility will be to coordinate the sales programs of Twin Coach Co.'s. Aircraft-Missile Division, Special Products Division, and the York Body & Equipment Co. subsidiary.

Twin Coach manufactures cargo trailers, truck and bus, and other vehicle components, major aircraft subassemblies, and shipping containers.

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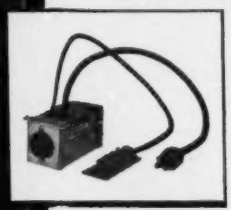
America calls 150,000 of these phone booths the warmest, brightest welcome anywhere at night.

Naturally, it's *automated light* . . . available only from Precision Multiple Controls. Miniaturized, fail-proof, a 2-component Precision photo-electric control will keep this bright voice in the night shining for years.

If you use light, it will serve you better — save you money — if it's *automated light* by Precision.



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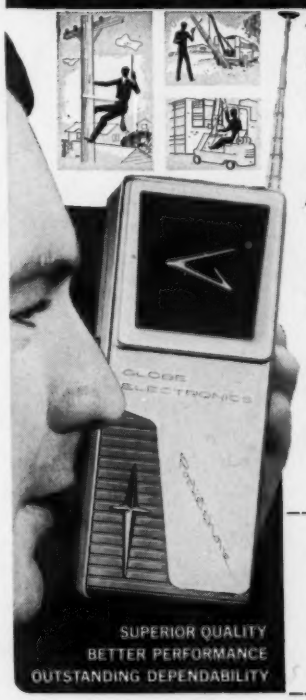

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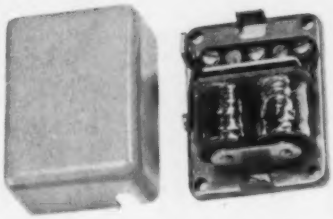

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PRICE $3.40 ea.

THE FINEST telephone and intercom use buzzer available! Made under patent license from Western Electric Co., each unit is equipped with silver contacts and reed mounted armature with flat retractile spring and top. MODERN COLOR blue-beige plastic cover gives pleasing sound. Longest possible life guaranteed. Available in several D.C. and 60 cycle A.C. voltages:

No.	Resistance in Ohms	C.C. Opr. Voltages Min.	C.C. Opr. Voltages Max.	A.C. Opr. Voltages—60 Cy. Min.	A.C. Opr. Voltages—60 Cy. Max.
SE-7A	270.0	14	40	15	21
SE-7C	2.6	2	8	3	8
SE-7E	105.0	10	20	10	20

USED WITH the popular new executive-type low cost SE pushbutton series. The SE-7 Buzzer answers every subscriber audible signalling need:

SE-554 65¢ ea. SE-559 $1.60 ea. SE-561 $3.50 ea. SE-565 $5.60 ea.

Write Now for full literature and prices!

SUTTLE EQUIPMENT CORP.

401 N. 15th St., Lawrenceville, Ill.
Lawrenceville 782
135 S. La Salle St., Chicago 3, Illinois
DEarborn 2-3108-9

More than 100 telephone employes from 57 companies in the southwestern states attended the ITT Kellogg carrier and telephone seminar recently conducted at the Marriotte Hotel in Dallas, Tex. K. H. Benninghoven, ITT Kellogg's southwestern regional manager, conducted the two-day course. He was assisted by Gerald Gatliff and William Woods of the ITT Kellogg staff at Raleigh, N. C.

Bruce, RCA Government Head, Electronic Data Processing

The appointment of Robert Bruce as manager, government marketing, commercial systems department, RCA Electronic Data Processing Division, has been announced by Donald H. Kunsman, vice president and general manager of the division.

Mr. Kunsman said the promotion of Mr. Bruce to the newly created position coincides with the expansion of RCA's data processing organization, which prompted the decision to centralize federal, state and local government marketing functions in Washington, D. C.

Mr. Bruce, whose experience in the computer field spans 20 years, had served since 1957 as manager for government sales, RCA Electronic Data Processing Division. In his new post, he is responsible for government sales and leasing activities of the division involving RCA's 501, 601, and 301 systems. He will report to George E. Dashiell, division vice president, commercial systems marketing.

A native of Washington, D. C., Mr. Bruce received a bachelor of science in civil engineering degree from Virginia Polytechnic Institute in 1931. For six years following his graduation, he served with the Public Works Administration of the U. S. Department of the Interior and the U. S. Bureau of Mines.

From 1937 to 1954, he was associated with the International Business Machines Corp., a connection interrupted by six years of service in the U. S. Army during World War II. While in military service, he rose from second lieutenant to colonel.

He was president of the Acragage Corp., Milford, Conn.; and government marketing manager for the Data Processing Division of Underwood Corp. before joining RCA in 1957.

Stromberg Appoints Hamlin West Coast Representative

William F. Hamlin has been appointed a sales representative for Stromberg-Carlson telecommunication products in General Dynamics/Electronics' West Coast branch in Burlingame, Cal.

W. F. HAMLIN

According to T. C. Thompson, general manager of Stromberg-Carlson commercial sales in the Telecommunication division, the appointment recognizes the continuing growth of the Independent telephone industry in the area served by the West Coast branch,

(Continued on page 59)

Cinderella

The most thoroughly tested lightweight phone available to the industry! Hundreds of thousands of units exactly like the Cinderella (even the parts are interchangeable) are already in use in homes across the country. This means you have two readily available supply sources for parts. You're ahead when you specify "Cinderella"!

Available in white, rose pink, aqua blue, light beige, light grey, sea green . . . with outside ringer for main station use, or without ringer for use as an extension . . . with matching soft coiled handset cord and installation cord . . . non-skid, non-mar rubber base pad . . . convenient night-light switch. Available from stock—immediately!

ITT KELLOGG

but that's not all! ITT Kellogg not only offers the product, but also helps you sell it! See next page.

FREE!

when you order the

Cinderella

a famous SELL-A-PHONE "Cinderella" promotion kit complete with

---

• Newspaper Ad Mats • Full Color Bill Inserts • Full Color Window/Truck Poster • Radio Commercials • Publicity Release with 8″ x 10″ Photo • Display Ideas Folder • Selling Tips • Permanent "Cinderella" Portfolio

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ITT KELLOGG

A Division of
International Telephone & Telegraph Corporation
6650 South Cicero Avenue, Chicago 38, Ill.

Telephone and Transmission Dept.
2912 Wake Forest Road, Raleigh, N. C.

Regional Offices and Warehouses:
CALIFORNIA: 23 Broderick Road, Burlingame, California, OXford 7-5780.
GEORGIA: 1594 Southland Circle, N.W., Atlanta 18, Ga., SYcamore 4-2441
INDIANA: 802 Knitters Ave., Fort Wayne, Indiana, Eastbrook 4562
IOWA: 1111 East River Drive, Davenport, Iowa, 324-0441
KANSAS: 7th & Sunshine Road, Kansas City 15, Kansas, MAyfair 1-4418
NEW YORK: 327 North West Street, Syracuse, N.Y., HArrison 2-9251
TEXAS: 1359 Motor St., Dallas 7, Texas, Riverside 7-5191

Form No. 900-6-61

Printed in U.S.A.

and provides additional manpower for serving the division's customers there. Mr. Hamlin will serve telephone companies in eastern Oregon, eastern Washington, Idaho, Utah, and Montana.

He began his telephone career in 1953 as an assistant buyer in Stromberg-Carlson's purchasing department. Later, he was made a stock status analyst in the materials control section, and then, several years ago, transferred to sales engineering. More recently, he was assigned to customer engineering in the telephone finance department and in the Rochester branch office.

A native of Utica, N. Y., Mr. Hamlin was graduated from Georgetown University, where he received a bachelor's degree in commerce.

He served 30 months in the U. S. Navy, much of that time aboard the submarine Redfish.

York Names Toensing To Head Truck Sales

The appointment of Werner E. Toensing as sales manager of the custom commercial and utility truck body department of York Body & Equipment Co., was announced on Jan. 26 by John J. Lee, president.

W. E. TOENSING

Prior to joining the York company, he was, for seven years, eastern division manager of Tel-E-Lect Products Inc. Experienced in vehicle hydraulic equipment, he worked closely with the vehicle departments of electric and telephone utilities.

From 1941 to 1953, he was with St. Paul Hydraulic Hoist Co., a division of Garwood Industries, where he was sales coordinator and service manager.

York Body & Equipment Co. is a wholly-owned subsidiary of the Twin Coach Co.

Heat
that Tent
Fast . . . . . .
with a
MoPeCo
TENT
HEATER
Two sizes—8,000 or 12,000 BTU
Weighs only 9 pounds
Uses Propane or Butane fuel
MoPeCo propane tent heaters give fast dependable heat to splicers working aerial cable in cold, wet and windy weather. Thousands in service in the communications field.
ORDER THROUGH YOUR FAVORITE DISTRIBUTOR
Write or Call
MORRISON-PELSUE CO.
2001 South Bannock Street • Denver 23, Colorado
RAce 2-2834

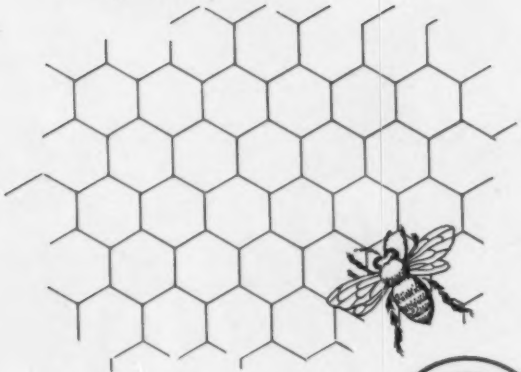
Participating in week-lông National Yellow Pages Service training session at Thornhill Publishing Co.'s headquarters in Everett, Wash., were, left to right: Elaine Rash and Harold Reush of Thornhill's Monrovia, Cal., office; Charles W. Rall, of Thornhill's Everett office; Helen Kotteman of American Telephone & Telegraph Co., New York; George B. Thornhill; and Henry Webber of AT&T Co.

Thornhill Publishing Now Participant in NYPS Program

The Thornhill Publishing Co. is now recognized by the American Telephone & Telegraph Co. as a participant in the National Yellow Pages Service (NYPS) program. Thornhill has been publishing telephone directories for Independent telephone companies in Washington, Oregon, California and four southwestern states for 16 years.

According to George Thornhill, vice president, "Providing NYPS service to national advertisers within our service areas will mean uniformity in their sales message and display advertising in as many as 4,000 telephone directories with a combined circulation of

PRO[illegible] BEST in construction

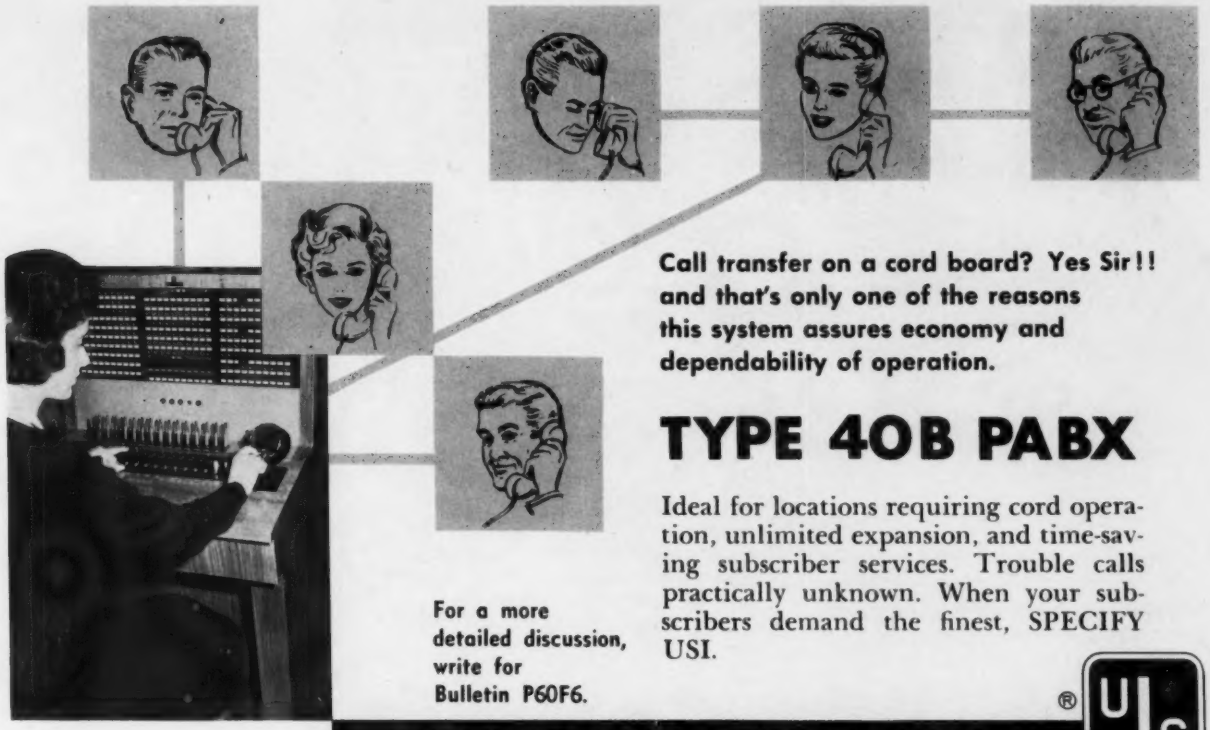


Strength with simplicity — imaginative engineering produces a strong, rugged structure with clean, simple, attractive lines.

the BN Booth

For full particulars, consult your distributor or write direct ...
Benner-Nawman, Inc., 3421 Hollis Street, Oakland 8, California.

a B-N booth is a busy booth!



Call transfer on a cord board? Yes Sir!! and that's only one of the reasons this system assures economy and dependability of operation.

TYPE 40B PABX

Ideal for locations requiring cord operation, unlimited expansion, and time-saving subscriber services. Trouble calls practically unknown. When your subscribers demand the finest, SPECIFY USI.

For a more detailed discussion, write for Bulletin P60F6.

UNITED STATES INSTRUMENT CORPORATION
CHARLOTTESVILLE, VIRGINIA

USI® CORP.

IN THE FIELD . . . AWAY FROM REGULAR POWER

terado Battery Converters

PROVIDE

110 VOLT, 60 CYCLE A.C. POWER FROM YOUR TRUCK BATTERY

TO OPERATE
- LIGHTS
- ELECTRIC SOLDERING IRONS
- ELECTRIC DRILLS
- OTHER ELECTRIC TOOLS

FOR
- NEW WIRING JOBS
- SERVICING AND MAINTENANCE
- OPERATION OF TEST EQUIPMENT

"TRANSISTORIZED" THE CONTINENTAL 275 to 300 watts MODEL 50-193 USERS NET $98.67

THE SUPREME 175 to 250 watts MODEL 50-153 USERS NET $73.34

Both models have remote control

mf'd. by terado COMPANY

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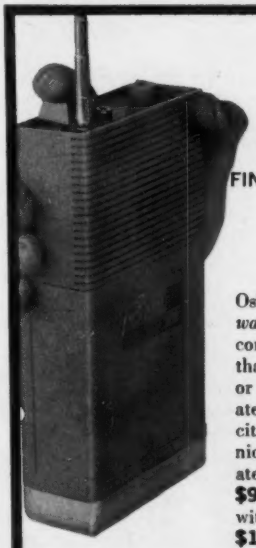


FINGER-TIP COMMUNICATION

the DUO-COM 100 WALKIE-TALKIE

Osborne's DUO-COM 100 pocket size *walkie-talkie* . . . a completely self contained transmitter and receiver that weighs only 20 ounces. No license or permits required . . . may be operated by anyone regardless of age or citizenship with dependable communication ranges up to 5 miles. Operates for pennies and is priced at only **$99.50** each or the DUO-COM 100S with an efficient squelch control at **$119.50** each.

The perfect companion . . . the OSBORNE 300 "Class D" base station at $149.50.

OSBORNE ELECTRONICS CORP. Dept. A2
13105 S. Crenshaw Blvd. • Hawthorne, Calif.

Please rush me complete details on your ☐ DUO-COM 100 ☐ DUO-COM 100S ☐ OSBORNE 300

NAME _____

ADDRESS _____

CITY _____ ZONE ___ STATE _____

SPEED UP POLE LINE REPAIR With Rust-Rid

Spray rust away instantly—here is the fast, simple and effective way to free corroded nuts, bolts, studs, pipe threads and other pole line hardware. You can spray from any angle—and reach into places that would usually be inaccessible.

SAFETY UP With Ice-Rid

Perfect for icy steps, doorways, equipment, poles, etc.; the quick, easy way to remove ice and frost from car windshields, windows, headlights, locks and any other surface where ice removal is necessary for safe operation. Will not harm car finishes.

Magnolia Chemical Co., Inc.
Chicago • Lafayette, Indiana
Tampa • Dallas • Los Angeles

Distributed by

Leich Sales Corp.
427 West Randolph Street
Chicago 6, Ill. • RAndolph 6-5441

more than 60 million. These advertisers can now reach any market in the United States or Canada, simply by placing a single order through one contact and one contract; and pay for this service with only one monthly bill."

NYPS was pioneered by the Bell Telephone System, with the assistance of Reuben H. Donnelley Corp., the General Telephone Directory Co., and L. M. Berry & Co.

Independent telephone companies were immediately encouraged to participate in the program. The growth of industrial parks in suburban and outlying communities has attracted large industrial and business organizations away from crowded metropolitan areas. It is felt that, these firms want NYPS service, and the Independent telephone companies should be in a position to handle and service these accounts. National advertisers in other areas will also want to place advertising in Independents' directories.

National Yellow Pages Service offers its advertisers these important features:

(1) Tells customers *why* to buy as well as *where* to buy.
(2) Presents sales message in permanent form.
(3) Provides access to more than 4,000 telephone directories.
(4) Permits flexible marketing pattern in selected directories.
(5) Merchandising and promotional services are available with each contract.

Also, this package means increased monthly revenues for Independent telephone companies participating in the program.

Following recognition of Thornhill Publishing Co. as an authorized service agent of the NYPS program, an intensive training session was held at the company's headquarters in Everett, Wash. Sales personnel from Thornhill's Monrovia, Cal. plant also attended. Henry Webber from the New York office of AT&T conducted the training session which was devoted to directory selling procedures. Helen Kotteman, also from the New York office of AT&T, conducted training sessions on directory production procedures.

Wilson Rubber Announces Management, Other Changes

A new top-management team has been installed at The Wilson Rubber Co. of Canton, O., makers of linemen's, industrial, household, and surgical rubber gloves.

Wilson's president, John W. Simmons, moves to Rutherford, N. J., to become executive vice president and chief of operations of Becton, Dickinson & Co., the parent company.

J. W. SIMMONS

Stepping into the top operating spot at Wilson is John Yacos Jr., former plant manager, who has been named general manager.

JOHN YACOS JR.

T. L. Peterson becomes sales manager. Mr. Peterson was formerly manager of sales for the industrial division.

In other promotions at Wilson, George Lenhart was named factory superintendent in charge of all production; Elwyn H. Becker was appointed product development manager; Howard Olsen became controller; and William S. Zimmerman moved up to plant manager.

Richard L. Moody, formerly Wilson sales representative in the field, has moved to Canton as assistant sales manager, industrial division.

L. E. Novy has joined the Wilson technical staff as plant chemist. He was formerly associated with the Battelle Memorial Institute of Columbus, O.

DEPRECIATION

Concluded from page 28

ter of the amount of depreciation taken on their books. The greater benefits to the former category seem to flow from taking as low depreciation on the books as can be justified, whereas the latter would appear to derive the greater practical gain from taking as high depreciation on the books as is properly allowable, thus strengthening the rate position and tending toward increased cash income.

To the extent that the small companies have been following the larger utilities with respect to depreciation policy, it may prove to their interest to re-examine the situation in the light of the foregoing, and if they feel that a change in book depreciation policy might be beneficial in their particular case, then to proceed accordingly, after receiving, if and to the extent necessary, the approval of the regulatory commission having jurisdiction.

GENERAL SERVICES COST

Continued from page 25

were put to local supervision on the basis of what reduction in force would be made if a new garage and service center building were built, no one would be willing to say that there would be any reduction in force, but they would be sure that it would improve production.

The principal concern of local supervision regarding the operation of the local storeroom is to make sure that it always has sufficient tools and material to get the production job done, and that it is never out of anything when it needs it. The difficulty lies in the fact that any storeroom which *never* runs out of stock is carrying far too much inventory.

Must Take Risk

Those who man an efficiently managed storeroom must take a calculated risk and recognize that there will be a few occasions when they will be out of something, and this might result in some increase in production costs. However, the controlling factor is the frequency of these out-of-stock occurrences. If the penalty for being out of stock is still less than the cost of carrying the additional inventory, then it is good management to hold the inventory to that level. Although this is fundamentally sound from the viewpoint of economics, it is not generally acceptable to local supervision, because it is looking only at the effect upon production.

This basic conflict between the amount and type of general services

BUILT-IN BALANCE

WITH ALPHADUCT REINFORCED DROP WIRE

Balanced breaking strength of the conductors—400 pounds plus, with #18 AWG, 30% copperweld. Adhesion of the insulation—strong enough to prevent slipping at maximum load without physical or electrical failure. Neoprene jacket—tough, abrasion and weather resistant with enough "beef" to prevent buckling at the "P" clamps all the way up to maximum conductor strength. Compression cutting resistance—no break-down in "P" clamps up to overall breaking strength of the conductors. This sturdy balanced construction resists deformation and provides greater protection against lightning failures. This combination of exclusive Alphaduct features assures you of built-in balance for more years of trouble-free service and lower initial installation costs.*

National Distributors: Automatic Electric Sales Corporation, Northlake, Illinois; Leich Sales Corporation, 427W. Randolph Street, Chicago, Illinois.

ALPHADUCT WIRE AND CABLE CO. NEW BRUNSWICK, N. J.

Regional Distributors: Buckeye Telephone & Supply Co., Columbus Ohio; The Lindsay Telephone Supply Co., Cleveland, Ohio; Pankey Supply Co., Charlottesville Va.

*It's dated for comparison.

PENGO AUGERS

Save you money 4 ways

PENGO HEAVY-DUTY Twin Helix Augers—14" through 96" hole diam.

1 **BORE FASTER**...put real "teeth" in earth drilling, save wear and tear on your diggers.

2 **STAY ON THE JOB LONGER** ...all wearing parts replaceable in the field; no down-time for shop welding.

3 **COST FAR LESS TO MAINTAIN** ...reversible teeth cost only 90¢ each, pilot bit only $8.00. Parts interchangeable on all PENGO augers you are using...less inventory!

4 **A SIZE AND TYPE FOR EVERY DRILLING JOB**

PENGO BORING HEADS for welding to your present auger flights.

PENGO FLIGHT AUGERS and ANCHOR AUGERS—6" through 36" diam.

IF IT'S AUGERS YOU WANT, WE HAVE 'EM—JUST ASK US!

PENGO Augers and Boring Heads are available for all popular types of diggers, from light-duty post hole and farm tractor machines to the largest heavy-duty earth drills. Write today for free catalog; please address Dept. 108.

13-B

PETERSEN ENGINEERING CO., INC.
Santa Clara, California

desired by the local production forces, and the actual requirements needed for efficient production, presents a real problem. During the past decade there has been a great deal of emphasis on decentralization of authority. However, decentralization requires administrative control of both capital and expenses on an over-all unit basis, so that higher management can still measure the effectiveness of the unit operation. Since this is not practical in the area of general services, decentralized control of these operations tends towards ineffective control, and higher costs. Centralized control of these operations will usually result in lower costs, but will also result in a lot of lower level management people not being satisfied with the type and amount of these general services which are provided.

Costs Must Be Emphasized

Regardless of the type of organizational set-up used, there is still a need for a better appreciation on the part of local supervision of the costs involved, and the fact that the only purpose of these services is to make it possible for production to be done efficiently. Higher levels of management can also help to develop this attitude among lower levels of management, by placing as much emphasis on these costs as they do on the production part of the job.

Field visits by higher levels of management are usually devoted to discussions of production efficiencies, service indices, and sales results. Comments upon such items as material in field stock, quantity and kind of motor vehicles used, small tool expense, and house service costs, rarely enter into such discussions. Consequently, local supervision becomes even more convinced than they were before, that the important part of their job is production efficiencies, customer's service, and sales.

Increased More Than Other Costs

An analysis of the annual capital requirements and expense associated with providing these general services over the past decade will undoubtedly show that these costs have increased much more than other costs throughout the business. This is the result of an appreciable increase in the unit cost, as well as a rapid increase in the number of units involved, for example:

The number of motor vehicles in the fleet has increased faster than the increase in craft forces, because of increased motorization of these forces, and the use of smaller crews, which is rapidly approaching an objective of one vehicle for each craftsman except in line construction, where two-man crews seems to be the current standard.

The investment in local stocks of material has increased appreciably with the introduction of colored telephones, and the varieties of equipment which must be on hand for immediate installation when required.

Building costs have increased faster than regular price level increases because of greater space requirements for such things as conference rooms and training rooms, and the addition of air conditioning equipment.

House service costs have risen rapidly with the increased levels of lighting, and the operating costs of air conditioning equipment, together with complex heating and ventilating systems.

Slow Up Accelerated Costs

The real challenge to management is to find a way to slow up this accelerated increase in costs. Mechanization, new methods, and new materials, have contributed greatly to reduced costs in the production job, but there is little possibility that such measures will result in any major reduction in the costs of general services.

With the introduction of the compact passenger car, and the economy truck, there seems to be a hope of reducing motor vehicle costs through greater use of such vehicles. However, experience to date is too limited to accurately predict what will happen to the operating expense as these vehicles become older and accumulate high mileage.

House service costs in larger buildings, undoubtedly, offer further possibilities of reduction through improved operation of the house service force by better planning and organizing of the work, together with some minor help from mechanization and better methods.

Perhaps the greatest possibility for reduction of these over-all costs lies in the area of a better appreciation of the costs involved by all levels of management, and a more realistic evaluation of what is essential for efficient production. If top management feels that the company is prosperous enough to provide services over and above essential requirements, then let it be evaluated, and recognized as a cost that it is willing to pay for prestige purposes. If not, then the only test of what is needed is the minimum requirements that will keep production working efficiently.

Subsequent articles will discuss specific methods and techniques to control general service costs.

File Incorporation in Wash.

Maurice R. Hull of Forks, Irwin L. Treiger and Charles F. Osborn of Seattle have filed for incorporation in the state of Washington in the name of the East Peninsula Telephone Co., Quilcene.

Used By: ELECTRICIANS • TELEPHONE COMPANIES • RADIO & TV SHOPS, ETC.

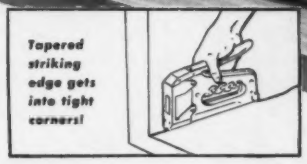
TAKES 3 STAPLE SIZES:
3/8" 7/16" 9/16"
AVAILABLE IN:
Brown, Ivory, Beige, Monel, Bronze, Natural

ARROW T 25

LOW VOLTAGE WIRE TACKER

FOR FASTER, SAFER, MORE SECURE FASTENING OF ANY LOW VOLTAGE WIRE UP TO ¼" IN DIAMETER, INCLUDING:
BELL WIRE • THERMOSTAT WIRE • INTERCOM WIRE • TELEPHONE WIRE • RADIANT HEATING • JACKETED WIRE (JKT) • ELECTRICAL WIRING • CO-AX CABLE.

CANNOT JAM!
(PATENTED NON-CLOGGING MECHANISM)

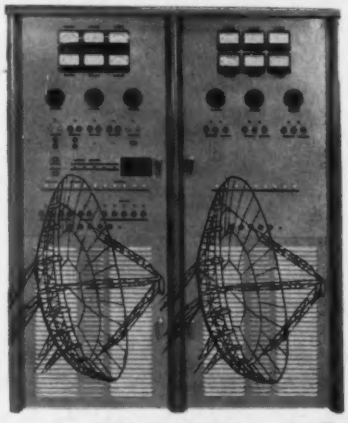


ARROW T-75 SHEATH CABLE TACKER
FOR ANY INSIDE OR OUTSIDE CABLE UP TO ½" IN DIAMETER
• Fastens ROMEX up to 12 - 3
• Fastens inside wire up to 26 pair
TAKES 3 STAPLE SIZES:
9/16" 5/8" 7/8"

WRITE FOR CATALOG

ARROW FASTENER COMPANY, INC. ONE JUNIUS STREET • BROOKLYN 12, N. Y.

CLEARANCE SALE
REFURBISHED
COMPLETE SCATTER SYSTEM



at 60% off

• 60 Telephone channels • Frequency range 1700-2400 mcs • 1 Kw output • complete "package" including: Power amplifiers—F.M. Exiters — Dual diversity receivers — Two 28 ft. and two 18 ft. antennas — Horns and mounts—etc. . . . one year guarantee

for further information please write

CANADIAN MARCONI COMPANY CMC CANADIAN MARCONI COMPANY

Telecommunication Dept. • 970 McEachran Ave. • Montreal 8, Quebec

WORK ON RELAYS?

Then you need this HANDY, COMPLETE
TOOL KIT

18 TOOLS

EVERY TOOL NECESSARY FOR ADJUSTING, CHECKING AND TROUBLE-SHOOTING RELAYS

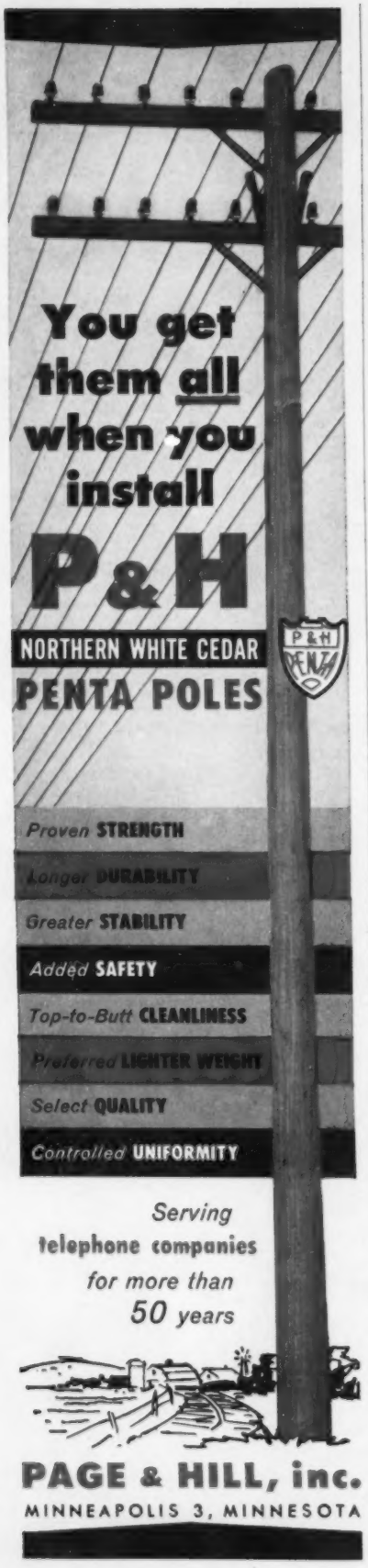
All 18 tools especially designed for RELAY WORK. Includes Contact Burnisher with extra blades, Spring Tension Gauge, Wrenches, Thickness Gauge Set, Inspection Mirror, etc. All in Vinyl Case.

KIT NO. TK-18
$34.00 COMPLETE

Write for bulletin and FREE copy of valuable book on "How to Service Relays."

P. K. NEUSES, INC.

511-19 N. DWYER ST. • ARLINGTON HEIGHTS, ILL.



Helpful Literature

TELEPHONE EQUIPMENT AND SUPPLIES CATALOG—More than 2,500 items have been included by Automatic Electric Sales in its case-bound, cloth-covered Telephone Equipment and Supplies catalog recently published.

This 310-page reference tool contains 1961 listings on hardware, tools, wood, cable and wire, cords, insulators, protective equipment, power testing equipment, and paystation booths and many other items for telephone construction and maintenance.

Also, for the first time, AE has included a section on telephone equipment, including telephones, telephone accessories, PABX equipment, paystations, and dial equipment.

The new guide incorporates ordering information, prices to help estimate costs, as well as information on shipments, terms and returned goods. Request HL641.

•

STANDBY CHARGER-BATTERY COMBINATION BULLETIN — A new bulletin, AR-104, recently published by C & D Batteries, describes a combination battery and AutoReg charger for standby starting of gasoline or diesel engines.

The battery is a C & D Slyver-Clad battery with lead-calcium plates and requires watering only once a year. Unusually long life is said to be obtained from the battery because of its lead-calcium plates.

The charger is a C & D AutoReg, which is especially designed for use with this lead-calcium battery. It provides a constant dc output over an ac line input variation as high as ± 15 per cent. The heart of the charger is a silicon rectifier with no known aging characteristics, the company states. There are no aging taps and no moving parts. C & D states the charger requires practically no attention. Request HL642.

•

TECHNICAL JOURNAL — The January issue of the *Automatic Electric Technical Journal* containing five articles by engineers of Automatic Electric Laboratories, Inc., Lenkurt Electric Co., and Electronic Secretary Industries, Inc., is now available.

The lead article in this publication discusses materials and production techniques used to assure printed wiring of the quality required for telephone central-office and subscriber-station equipment.

Other reports and articles pertaining to the communications field include:

"The Model LP Electronic Secretary Answering Set."

"The 57A Microwave Path Protection System."

"Extension of Type A SATT Systems to Direct Distance Dialing."

"Relays for Industrial Applications."

Request HL643.

•

BULLETIN ON ELECTRONIC MONITORING SYSTEMS—Lynch Communication Systems has recently put out a new bulletin on its B1020 electronic monitoring systems, and their application to microwave transmission lines; power, gas, and water utilities; burglar and fire alarm systems; radar systems, oil and gas fields; pipelines, and other industrial requirements.

This Lynch electronic system, the

TELEPHONY PUBLISHING CORP.
508 S. Dearborn St.
Chicago 5, Ill.

Please have the manufacturer send me without obligation the literature indicated by the following numbers:

HL641_____; HL642_____; HL643_____; HL644_____;

HL645_____; HL646_____.

Name.....

Company.....

Street.....

Town and State.....

2/18/61

company says, can monitor any condition that can be represented by an electrical contact closure. Among the applications for it are: communications equipment, circuit breakers, motor-driven valves, hazardous atmosphere sensing devices, pressure switches, temperature and level switches, over-or-under speed switches, over-or-under voltage switches, flow switches, and for transmission of binary coded analog data.

Features of the monitoring system described in the Lynch bulletin include:

(1) High-speed continuous monitoring.
(2) Low-cost-per function monitored.
(3) High degree of reliability, with one direction of transmission.
(4) Monitoring controlled by synchronized pulse generators.
(5) Solid-state electronic switching.

These B1020 monitoring systems contain circuits designed to maintain operation, it is said, even when components are in a state of advanced aging. The basic equipment can be mounted on standard 19-inch relay racks. The transmitter for either 18 or 36 functions takes 8¾ inches (or 5 rack spaces), plus 3½ inches for power supply.

Complete dimensions and rack profiles, ordering information, specifications, and a glossary of terms (for systems where information is expressed in binary code), appropriate for Lynch electronic monitoring equipment, are also to be found in this illustrated bulletin. Request HL644.

•

EARTH AND ROCK-BORING POWER TRANSMISSION—The complete line of Ka-Mo earth and rock boring power transmission units, auger sections, and accessories is illustrated and described in a 12-page brochure released by the Ka-Mo Tools Department of Kwik-Mix Co. Kwik-Mix is a division of the Koehring Co.

This new two-color brochure covers Ka-Mo's air, hydraulic, electric, and gasoline powered boring units, cutting heads, augers, feed tracks, and other accessories. Each model in the line is listed, along with condensed specifications. Also included is a description of the many types of cutting heads available. Request HL645.

•

DIELECTRICS OF AERIAL DEVICE—For telephone and other utility personnel concerned with aerial devices, the Asplundh Chipper Co. has issued a 12-page, 8½-by-11-inch booklet on the application and testing of proper dielectrics.

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in research to insure insulation of aerial devices on which personnel may be working. Included in the booklet are discussions of electrical characteristics, high-voltage proof tests, quality control and maintenance, electrical tests, and other factors essential for electrical safety of line clearance crews, for example.

Booklet illustrations show a basket liner undergoing test in a tank; basket controls to the pylon box; and a pylon insert. In addition, a detailed resistance table, and a chart for testing component parts of line lifts are offered by Asplundh. Request HL646.

Lenkurt Electric Appoints Keeton Advertising Manager

Thomas N. Keeton has been named advertising manager of Lenkurt Electric Co., Inc., San Carlos, Cal.

Lenkurt is manufacturing electronic telecommunications equipment, and conducts a national advertising program under the supervision of advertising and promotion director Fred C. Hill.

Mr. Keeton joined the company last year as assistant advertising manager. He previously was the aviation electronics advertising director of Collins Radio Corp., Cedar Rapids, Ia.

From 1956 to 1957, he was a pilot and a public information officer in the U. S. Air Force.

Mr. Keeton holds degrees from Drake University and the University of Iowa.

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WHAT IS OBSOLESCENCE?

The obsolescence of any product is not determined solely by its date of manufacture ...a "Model T" built today would still be obsolete.

Although there have been telephones "introduced" more recently than the Ericofon, they have been, without exception, designed around a concept that is as obsolete as the "Model T".

Only the Ericofon embodies a new design concept.

Only the Ericofon packages the entire instrument... receiver, transmitter, dial and signaling device.... in one unit.

Only the Ericofon offers "the dial comes to you" convenience.

No other telephone in the world is as light in weight. No other telephone in the world requires as little space. No other telephone in the world is as completely portable.

No other telephone in the world has been designed to be aesthetically beautiful.

When you buy and install two-piece telephones, you are buying and installing built-in obsolescence!

Progress is inevitable. Telephone subscribers have already indicated their desires for more modern, more convenient telephones... and they are indicating these desires more strongly every day.

The Ericofon is the only telephone in the world that is not obsolete today... that will not be obsoleted tomorrow.

This is plain fact... plain truth!

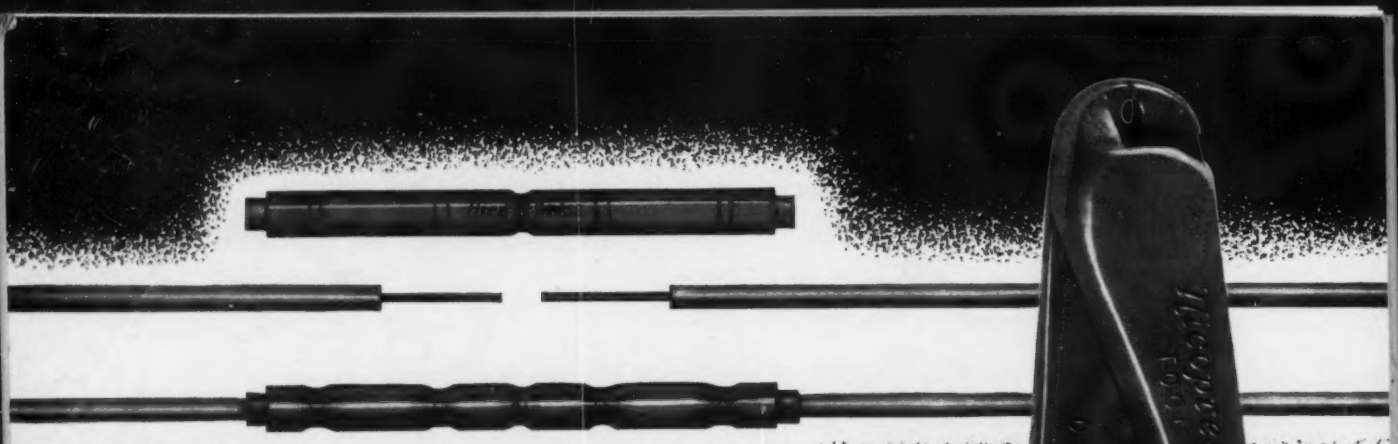
When you buy telephones... think carefully... do you want to buy built-in obsolescence?

THE DYNAMIC FORCE IN THE TELEPHONE INDUSTRY

NORTH ELECTRIC COMPANY

GALION, OHIO

No. 3 in a series of factual presentations on the North Ericofon



Nicopress insulated splicing sleeves for rural and urban multi-distribution wires

With this Nicopress D17 Tool and Nicopress Insulated Splicing Sleeves there is no need to tape splices to keep out moisture. The plastic sleeve within the outer copper jacket fully insulates the inner conductivity splice and seals the splice from air and moisture.

Nicopress Sleeves are available in three sizes for multi-distribution wire: 19 AWG, 22 AWG, and 24 AWG. One Nicopress D17 Splicing Tool fits all three sleeves.

The National Telephone Supply Company

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